The Mining Journal

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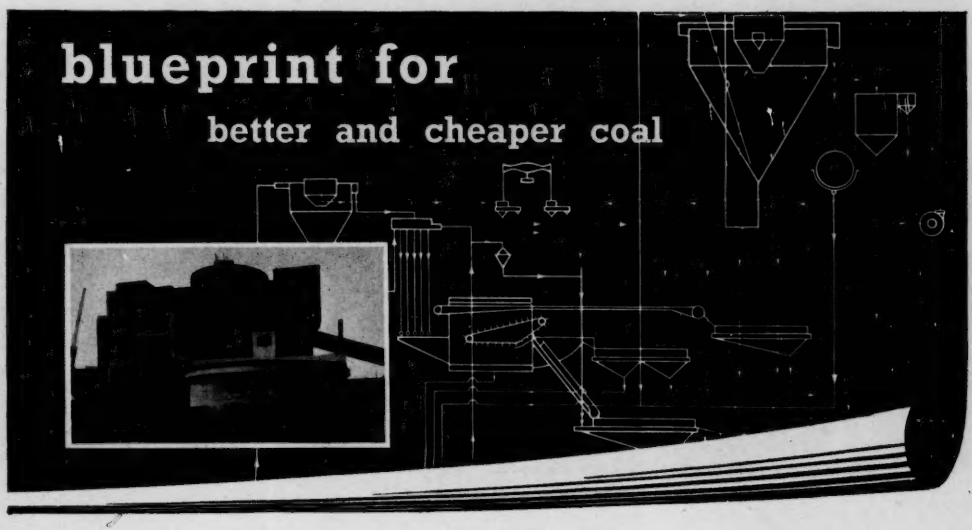

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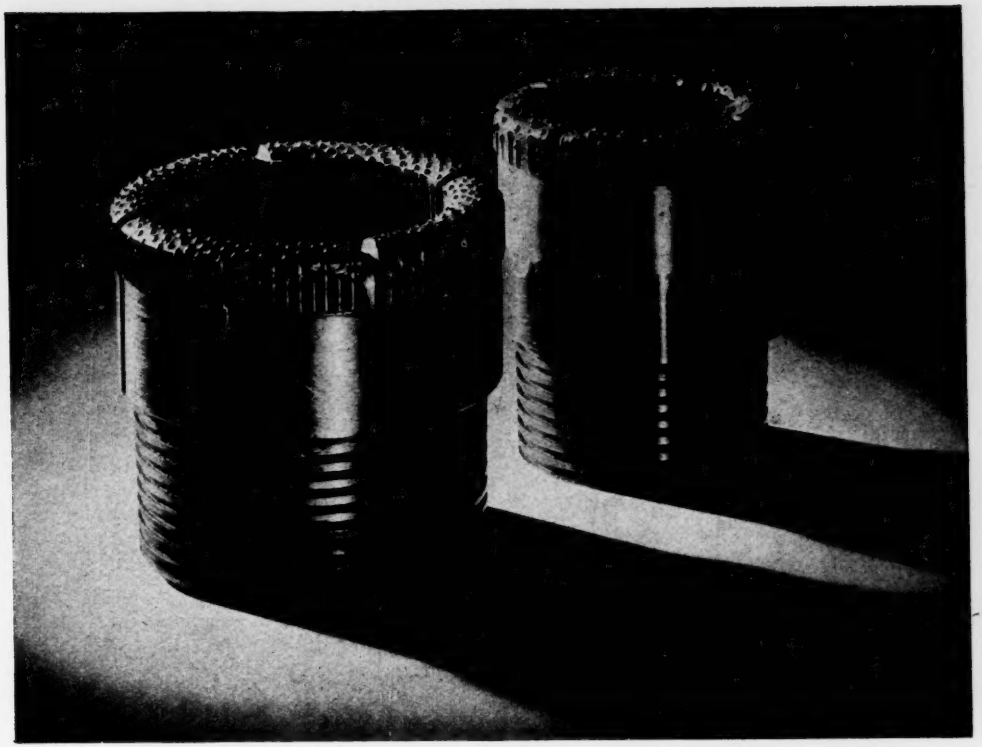

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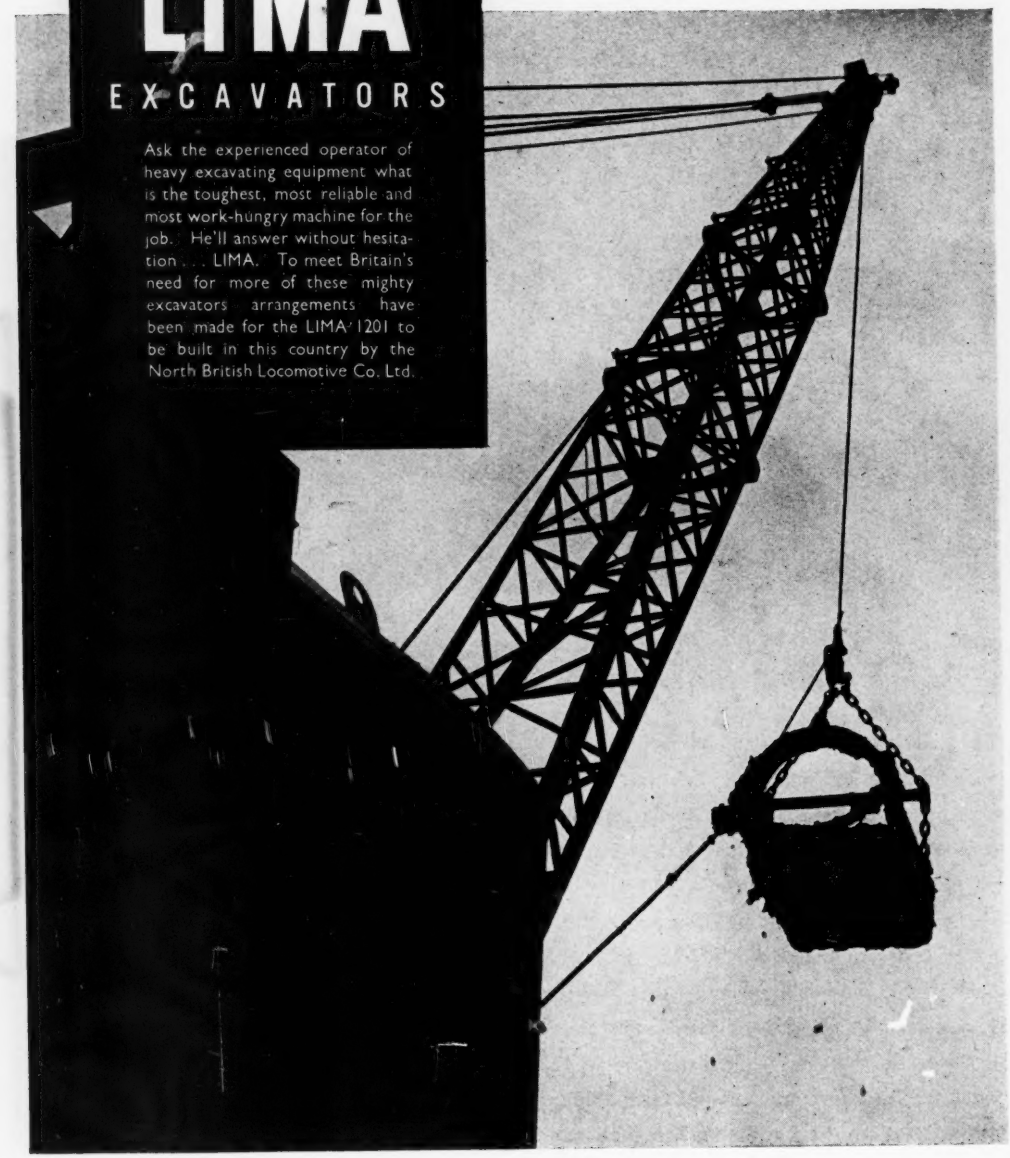

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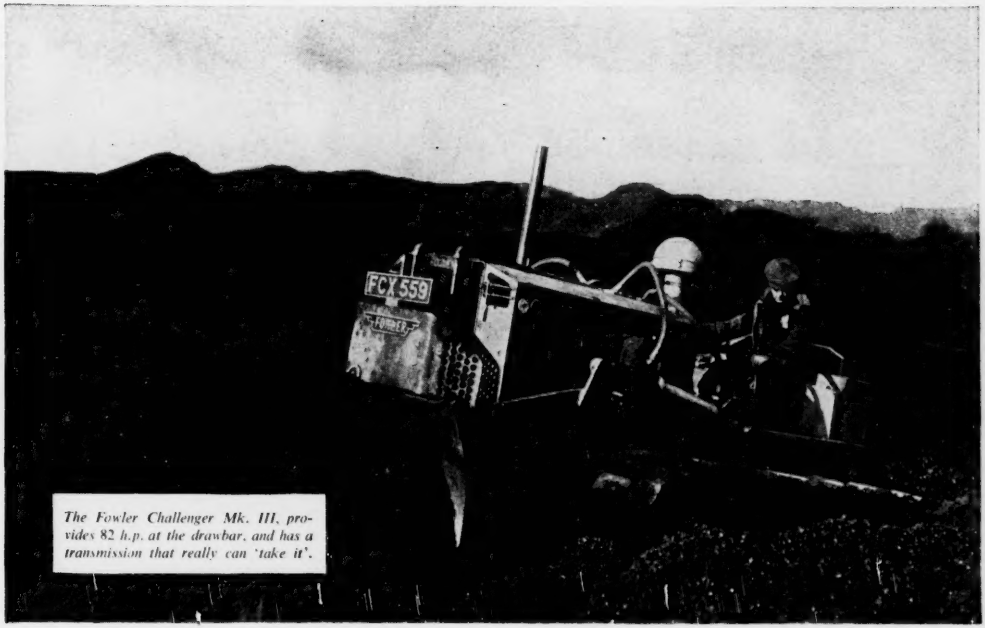

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THIS WEEK'S FEATURES

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NOTES AND COMMENTS

Tin Production in the First Half of the Year

With the great decline in tin prices since February, and the uncertainty regarding future levels, it is important to see, as far as possible, what influence the unprecedented price levels have exerted in stimulating mine production from the chief countries of the world in the period. Broadly speaking production seems to have increased little if at all. In Malaya the output for the first six months of the year was 28,015 tons as compared with 28,945 tons in the first half of 1950, a decline of 930 tons. In Indonesia the output is reported as 15,297 tons against 15,717 tons a year ago, a decline of 420 tons. As regards Siam, we have at present only the shipments to the Straits smelters, and these amounted to 3,565 tons as compared with 3,163 tons for the second half of 1950, indicating an increase of 402 tons. Some Siamese concentrates may have gone to the States, but we have no information on this point. In any case they are not likely to have been large. We have only five months' figures for Bolivia, and the Congo, and these were, in the case of Bolivia 14,573 tonnes exported as against 12,377 tonnes for the first five months of 1950, an increase of 2,196 tonnes. In this connection it may be noted that imports of Bolivian concentrates into the U.K. were 14,165 tons compared with 12,212 tons in the first six months of 1950, an increase of 1,953 tons of concentrates or 1,347 tons of metal, which suggests that the great bulk of the exports came to Great Britain. The output of the Longhorn smelter for the first six months was 18,115 tons compared with 15,258 tons for the first half of 1950, an increase of 2,557 tons, but there may be a considerable time lag as compared with the Bolivian export figures. As regards the Congo, production for the first five months of the year is given as 5,506 tons compared with 6,400 tons for the same period of last year—a fall of 894 tons. Nigerian imports into the U.K. (which allowing for the time lag should closely correspond to output) were 6,041 tons of concentrates in the past half year against 5,910 tons in the first half of 1950—a gain of 131 tons. Imports into the Straits from Burma in terms of metal were 423 tons (691 a year earlier), and from other countries 130 tons (140 a year ago).

Altogether, it would appear that mine production in the first half of the year aggregated very much the same as a year ago, and therefore that the record prices which ruled exercised little influence on the tonnage of tin going to the smelters. What effect the heavy subsequent fall which has been progressively experienced since last March will have, it is impossible to judge as yet. But it obviously is unlikely to increase production. Exports of tin from the Straits declined heavily owing to the realization of the stocks held by the Ministry of Supply in the East. The total for the past six months was 31,901 tons, as compared with 38,308 tons in the first half and 43,405 tons in the second half of last year, and this means a corresponding fall in the supplies of metal which will be currently available to consumers.

Copper Resources of Canada

We recently received an interesting memorandum prepared by Mr. W. R. McClelland of the Canadian Dept. of Mines Mineral Resources Division on the copper resources of the Dominion. One of the main economic problems of future years is where we are to look for new deposits, which can be exploited economically, of most of the base metals. In the past the problem has been rather to find the capital necessary to create communications and transport facilities to make it worth while developing potential mineral deposits in remote and unprospected tracts of the world, which it is necessary to work on a large scale if large low-grade ore bodies are to be profitably handled. To-day, temporarily, at any rate, money is forthcoming from Governmental sources to promote all kinds of major schemes of territorial development, and the problem, therefore, is becoming rather one of discovering and proving new mining land on a scale commensurate with world demand. It is a common complaint that the last ten or twenty years have yielded little, if anything, in the way of major discoveries in the U.S. There are large schemes under development such as the San Manuel copper in Arizona and the New Butte project in Montana, but these are not new discoveries. And it is the failure to make such fresh finds which is causing the American copper industry to turn back on earlier known ore bodies in default of fresh discoveries.

The report now under consideration suggests that a like situation is arising in Canada—the world's fourth largest copper producer. Copper development in the Dominion has been rapid, especially since the beginning of World War II, during which time Canadian output amounted to more than a third of the production of the past 50 years, mainly from long established mines. The chief Canadian producer is, of course, International Nickel which last year produced 112,575 s.tons, and with its new extensions, both underground and at the mills,

should be in a position to increase this very considerably. Whether the immediate pre-war figures, culminating in 173,079 s.tons in 1940 can again be attained seems doubtful, despite the fact that last year reserves were computed at 252,859,725 s.tons of copper-nickel ore. Canada's mine production of copper last year was 261,914 s.tons, which was slightly below the 1949 figure, and some producing mines are already nearing depletion. The second largest Canadian producer last year was Hudson Bay with a total of 39,794 s.tons compared with 42,622 s.tons in the previous year. The third largest producer was Noranda, which produced 25,731 s.tons from its Horn mine while Quemont, closely allied with Noranda is credited with 11,635 s.tons. East Sullivan which started production at the beginning of 1949, produced 16,796 s.tons while Waite Amulet, another Noranda subsidiary yielded 12,936 s.tons. This last-named, however, is only turning out about half the production obtained during the war, and like Granby Consolidated, Sherritt Gordon and Britannia seems to be among the producers which are approaching the condition mentioned in the report of "nearing depletion," though the latter's ore reserves are 4,000,000 s.tons representing a copper content of some 60,000 s.tons suggesting a life of some seven years. In some cases, of course, copper is only one of the metals produced, and in the case of Noranda, its gold production is hardly less important and with an eventual increase in the world price, due allowance must be made for possibly much larger earnings from gold.

When we come to new major deposits now under development the most important is possibly Lynn Lake, where Sherritt Gordon has 14,055,000 s.tons developed, which though only bulking 0.62 per cent copper, averages nearly 1½ per cent nickel. The other major ore deposit under development is Copper Mountain or Gaspé Copper where Noranda at the end of last year had developed over 50,000,000 s.tons averaging 1.2 per cent copper.

With Newfoundland now a portion of the Canadian Dominion, Buchans Mining Company, though primarily a zinc-lead producer, has acquired fresh interest through new deposits reported early in 1950. Up to that period Buchans showed proved reserves of 4,000,000 s.tons expected to yield 56,000 tons of copper, while Gull Pond, with ore reserves of 2,160,900 s.tons is reckoned to be good for about the same quantity of the metal. But of course the possibility of new discoveries is by no means exhausted and current prices and urgent demand combine to provide an unprecedented incentive for exploration and development.

As is well known, Canada is well provided with smelters, of which those of the International Nickel Company are the largest, with a rated capacity of 235,000 s.tons of copper-nickel matte a year at Copper Cliff and 55,000 s.tons at Coniston. The Noranda smelter has a yearly rated capacity of 73,000 s.tons of anode copper, and the Hudson Bay's Flin Flon smelter a capacity of 60,000 s.tons of blister copper. Falconbridge has a rated annual capacity of 18,000 s.tons of copper-nickel matte. Copper is refined by the International Nickel Company at Copper Cliff, where the plant has an annual capacity of 168,000 s.tons and by Canadian Copper Refiners Ltd., at Montreal East with a capacity of 112,000 s.tons. The Falconbridge matte is, of course, exported to Kristiansand in Norway for refining.

Great British Steel Project Nearing Completion

The formal inauguration last week of the Margam Abbey Works of the Steel Co. of Wales (*Mining Journal*, July 20, p. 71) is an important landmark in the history of Britain's heavy industry, indeed, it is claimed that there has been no single project of this size in this country since the railway age. Erected on marsh and dune after four years' work, it marks an important step towards the completion of the vast project launched by the Steel Co. of Wales, formed in 1947 as a joint venture of a number of leading iron and steel companies. The importance of the new works is sufficiently demonstrated by the fact that the country's ingot producing capacity will be increased by about 10 per cent when the new open hearth steel furnaces are completed. Strips 72 in. wide (the widest in the U.K.) will be produced in the continuous strip mill, to be finished either at the cold rolling mill at Margam or at the Trostre tinplate works, one of the most up-to-date electrolytic tinplate plants of its kind. However, until the latter plant has been completed, strip from Margam has to be sent to other plants in the Principality.

The whole complex will, it is hoped, be completed and in operation within a few months, increasing the supply of scarce iron and steel products urgently required by many British industries.

Wheal Bellan and Wheal Hermon to Re-open?

The possibility that two more Cornish tin mines may re-open follows on the news that a well established South African company during the past two weeks has been investigating the tin bearing potentialities of the Wheal Bellan and Wheal Hermon properties situated a half mile to the south of Cape Cornwall.

At present the company is limiting its examination to opening up the old adits and taking ore samples but it is expected that if favourable results are obtained from these initial operations further exploratory work including the sinking of boreholes will follow which may ultimately lead to the company developing these two properties into active producers under its control.

The two properties are in the Pendeen St.-Just area which embraces the famous old Levant Mine—shut down in 1930 after 110 years of active production—and Geevor which is the only tin producer in the area at the present time. Mining operations ceased at Wheal Bellan in the 1890's due to the lack of adequate pumping facilities to cope with the water encountered and the property was finally abandoned in September, 1919. Wheal Hermon does not appear to have been worked since 1878. However, the merits of these two properties have not gone unnoticed. Mr. J. H. Trounson in his recently published memorandum entitled "Mineral Areas in Cornwall Worthy of Investigation" (see *Mining Journal*, February 23, 1951, page 171), said that the prospects for the mines in this area were still good, more particularly on the seaward portions of their lodes.

Costa Rica Resumes Exporting Manganese

Marking Costa Rica's first export of manganese in 32 years, 325 tons have been shipped to the United States, consigned to the United States Steel Corporation, Baltimore, Maryland. Additional shipments are scheduled to be made by the Latin American Resources Development Co., whose concessions include 43 mine sites in Guanacaste Province, Costa Rica. The shipment of manganese ore just made is of comparatively high grade—49.75 per cent.

During the first world war, some 60,000 tons of manganese were shipped to the United States from Costa Rica, but the company then operating has been moribund for some years. Its Costa Rican holdings were taken over recently by the Latin American Resources Development Co., a newly formed New York enterprise, which is the parent of a locally formed operating company, Minerals Operating Co. of Costa Rica, which, basing its estimates on three independent geological surveys, expects to produce 6,000 tons of manganese a month before the end of the year.

Canada

(From Our Own Correspondent)

Timmins, July 21

Hollinger Consolidated Gold Mines with a record of gold production far ahead of any other mine so far established in Canada, is in the throes of a labour strike. Hollinger first went into production in a small way in 1912, since which time more than $410,000,000 has been produced. Ore reserves are still being maintained at around $80,000,000. However, the abnormally high cost of material and supplies as well as labour has caused a sharp decline in profit. This is compelling the company to bypass large tonnages of ore which would otherwise have been profitable to mine. With gold fixed at a value of $35 an oz. the company is squeezed between labour's demand for higher pay and the limited value of its product. The labour strike is causing widespread alarm in Canadian mining fields, more particularly in the city of Timmins which lies in the heart of the Porcupine goldfield adjacent to Hollinger Consolidated. Already a considerable exodus of population is reported—with experienced miners seeking the higher wages and greater stability prevailing at this time in the base metal mining areas such as Sudbury in Ontario, Noranda in Quebec, and Flin-Flon in northern Manitoba. Municipal authorities in Timmins have addressed direct appeals to Ottawa to reconsider the Bretton Woods agreement and to permit gold producers in Canada to sell their product to the highest bidder on the world market. Meanwhile the company and the union continue to negotiate, yet with both factions knowing that a settlement based upon a further increase in wages will shorten the profitable life of the mine—and likewise the city of Timmins itself.

News dispatches which suggest the possibility of the British government considering steps to duplicate to some extent in Canada the accomplishments of Anglo-Iranian Oil Co. in Iran has aroused widespread interest in this country. Canadians in general would welcome such a development in the rapidly developing petroleum areas of western Canada.

IMPORTANT ZINC MINING PROJECT

Another large zinc producing mine, Barvue Mines Ltd., is in the making in Canada, this time in the township of Barraute in northern Quebec. The new financing of $7,000,000 is being done through issue of first mortgage sinking fund bonds bearing 5 per cent interest. A local bank is taking $3,000,000 of the Series "A" Bonds, and with Quebec Manitou Mines, and Barvue Mines each taking $500,000. Series "B" which rank equally with Series "A" as regards security, have been underwritten by an investment group of brokers. The programme of development and construction has commenced. The objective is to provide railway sidings, construct hydro-electric power transmission lines, erect reduction works capable of handling 4,200 tons of ore daily—and to accomplish all this within a period of approximately one year. The ore deposits are among the more impressive discovered in Canada in recent years, with exploration and development to only comparatively shallow depth having indicated upwards to 15,000,000 tons.

EXPANDING URANIUM PRODUCTION

Uranium production is scheduled to begin from the Ace property at Beaverlodge Lake in Northern Saskatchewan some time early in 1953. The property is owned by Eldorado Mining and Refining (1944) Ltd. which in turn is owned by the Canadian government. A shaft is to be put down 1,000 ft. on the Ace ore zone, so located as to give access to also the nearby Fay deposit through a crosscut of 4,000 ft. in length. Initial hoisting capacity will be 2,000 tons per day. With the original Eldorado deposit at Great Bear Lake still growing—output for 1950 having been 29 per cent greater than 1949—and with the new deposits developing satisfactorily in Saskatchewan, close study is being given to new and improved methods of refining. Should tests and investigations warrant, consideration will be given to erection of a new refinery to replace the plant which has served so well up to this time at Port Hope in Ontario. Near Beaverlodge Lake itself a new townsite has been selected, to be known as Radium City, located on level land about six miles from the Ace property. Provision is being made for an expected population of about 2,000 in the early stages, and possibly for 5,000 or more within the next six years. Besides accommodating the employees of the new uranium mines, the new municipality may be expected to represent a base from which prospectors and miners may reach out still farther into the undeveloped areas of Canada's northwest.

Capital continues to seek investment in Canada in large volume. Although the country suffered an unfavourable trade balance of $300,000,000 in the first half of 1951, yet the exchange reserve of gold and U.S. dollars as of June 30 held at $1,683,000, a decline of just $59,000,000, thereby showing some $240,000,000 in new foreign investments in this country since January 1.

ILMENITE DEVELOPMENT IN QUEBEC

Development of the large deposits of ilmenite at Lake Alard in Quebec may be greatly expedited if the report of the United States Navy is correct that a process has been develpoed under which titanium may be produced at a cost of about 80 per cent below that heretofore prevailing. The metal, being nearly 40 per cent lighter and nearly equal in tensile strength to steel, promises to find extensive use in jet and gas-turbine aircraft.

Advocates of the St. Lawrence deep sea waterway from the Gulf of St. Lawrence to the Great Lakes in the heart of the North American continent are meeting with stiff opposition at Washington. The outlook is that if the project is to proceed in the reasonably near future, Canada will have to undertake the task alone.

Aerial Magnetic Survey of Labrador Iron Deposits

Aeromagnetic Surveys, Toronto, have commenced on an airborne survey which will cover some 16,000 line miles in the southern end of the Labrador Trough area for the Iron Ore Co. of Canada to outline extensions of known ore bodies and to endeavour to locate new ones. The equipment being used includes an airborne magnetometer and other geophysical instruments, one of which is a newly developed airborne detection device for radioactive minerals. The amphibious Canso flying boat, which is being used to carry the magnetometer and other instruments, is expected to take approximately four months to complete the survey and the magnetic data obtained will be processed and compiled in the form of magnetic contour maps in the Toronto laboratories of Aeromagnetic Surveys Ltd.

This is the largest aerial magnetic survey yet undertaken in the area of the major Quebec-Labrador iron deposits. A survey of 3,000 line miles was carried out by the same company earlier this year at the northern end of the Trough near Ungava Bay for Fenimore Iron Corporation.

Aeromagnetic Surveys Ltd., an affiliate company of The Photographic Survey Corporation Ltd., has flown over 60,000 line miles of airborne magnetometer surveys since commencing operations in 1949.

Philippine Mineral Production

The following article is based on notes on the Philippines published in the April, 1951, issue of *Mineral Trade Notes*, Vol. 34, compiled in the Minerals Division, U.S. Bureau of Mines.

Production of metallic and non-metallic minerals in the Philippine Republic in 1950 indicated substantial increases in mine output, but expansion and rehabilitation operations were disappointing in view of world demand and the Philippine mineral potential. Enough capital was available for general investment purposes in the islands, but mining companies were reluctant to commit further funds to an industry that did not offer the rate of return possible in commerce and trade. The limited amount of war-damage payments received by the mining companies was not enough to meet the over-all demands of the industry. The margin of profit was too small in relation to the risk involved, with the result that, at the end of the year, only about a third of the pre-war mining facilities were in operation.

APATHY OF LOCAL INVESTORS

The general business slump, lack of security for both persons and property in the provinces, and difficulty in obtaining supplies and equipment all contributed to the apathy of local investors in mining properties. This attitude became even more pronounced toward the end of the year, when, in implementation of the Bell Mission Report, an exchange tax of 25 per cent was proposed. The mining industry was particularly affected by import and exchange controls. Applications for vital items such as machinery, explosives, chemicals, and electric cables took months to process, and in many instances operations were closed down before the material arrived.

The outlook for the mining industry was further clouded by competition from mines in the sterling-bloc areas. Reliable mine operators believe that the establishment of a P4 ($U.S.2) per day minimum wage, together with the pending tax programme, would increase production costs to a point where only the high-grade mines will be able to continue operations. In spite of the fact that current demand by the free nations has encouraged manganese mines to strive for maximum output, the long-range prospects are not bright enough to induce the Luzon Stevedoring Co., Philippine's largest producer, to greatly expand its operations. There are several good manganese claims that could be developed with the investment of P300,000 to P500,000, but investors are unwilling to risk their capital.

GENERAL REDUCTION OF OUTPUT

Intermittent labour trouble, fluctuating demand and exhaustion of pay ore all contributed to a general reduction in output, and as of October, there were only 35 producing mines. Tayan Gold Mines, ordinarily a small, but regular producer, since the liberation, closed down operations because of the lack of security. The Philippine Iron Mines at Larap were unable to ship any ore for three months while a new contract was being negotiated with Japan. The Benguet-Balatoc and Lepanto Consolidated Gold Mines at Baguio experienced a series of strikes. Marinduque Iron Mines closed down at the end of the year because of high labour costs. Misamis Chromite Mines were forced to cease operations owing to exhaustion of ore reserves and inability to obtain funds for further exploration.

Output of gold in the Philippines during 1950 increased by 16 per cent, from 287,844 oz. in 1949 to 333,991 oz. in 1950, whereas silver declined by 1 per cent, from 218,419 oz. in 1949 to 216,034 oz. in 1950.

Details of the output of individual companies are given in the following table:—

	Gold Value		*Silver Value,*	
	Oz.	*P*	*Oz.*	*P*
Atok-Big Wedge Mining Co.	50,062	5,206,200	31,443	44,652
Balatoc Mining Co.	85,088	8,508,800	53,247	78,481
Benguet Consolidated Mining Co.	69,287	6,928,700	43,306	64,054
Lepanto Consolidated Mining Co.	30,446	3,044,600	—	—
Mindanao Mother Lode	55,142	5,514,200	58,462	78,441
Surigao Consolidated Mining Co.	36,359	3,635,900	23,286	34,971
Taysan Gold Dredging*	1,520	152,000	5,093	7,638
Love Lead-Silver	—	—	1,086	1,570
Tambis Gold Dredg. Co.	1,882	188,200	—	—
Surigao Placer Synd.†	1,821	182,100	—	—
Nor-Min Ventures‡	384	38,400	111	177
Total, 1950	333,991	33,399,100	216,034	309,984
1949	287,844	25,066,694	218,419	308,374

*Mine closed April 1, 1950.
†Closed March 1, 1949, and re-opened in June, 1950.
‡New placer mines began production in September, 1950.

The Batong Bubay Gold Mining Co., Itogon Mining Co., and Baguio Gold Mining Co. expect to be producing by the middle of 1951 or early in 1952. Baguio Gold Mining Co. has signed a contract with an American company that provides for complete rehabilitation of its mines by October 1, 1951, including the installation of a 400 ton milling and cyanidation plant. San Mauricio Mining Co., United Paracale Mining Co., and Coco Grove Mining Co. are rehabilitating both surface and underground workings in the Paracale district. Masara Gold Mine, in the Davao district, is expected to be producing in the latter part of 1951.

The Government permitted producers to sell 75 per cent of their gold output in the local market, where prices ranged from P120 to P135 ($U.S.60 to $U.S.67.50) an oz.

Gold reserves in the Philippines are estimated at 19,287,000 s.tons in lode deposits and 21,133,000 cu. yd. in placer deposits. Small quantities of silver are mined in conjunction with gold, but no estimates of reserves are available. The assay value of all developed and explored gold reserves is estimated at P241,147,725. During 1950, 5,194 l.tons of gold concentrates were shipped to the United States.

MILL CAPACITY OF LEPANTO COPPER DOUBLED

As regards copper output in the Philippine Republic, the Lepanto Consolidated Copper Mines increased its mill capacity from 500 tonnes to 1,000 tonnes daily and the company's output in 1950 was the highest ever attained by a Philippine copper mine. Total output of copper concentrate in 1950 (in tonnes) was 10,384 (7,007 in 1949). Exports of copper concentrates, all to the United States, totalled 41,248 tonnes in 1950 and 25,674 tonnes in 1949.

The Paracale-Gumaus, San Mauricio Mines & United Paracale Mining Co., at Paracale, Camarines Norte; The Suyoc Mining Co. at Suyoc, Mankayan, Mt. Province; San Remigio Mines, Inc. at Sibalem, Antique; and the Pilar Copper Mines at Pilar, Capiz, all pre-war producers, are closed and are awaiting new capital.

The 1950 output of manganese ore (in tonnes) was 29,867, 14 per cent more than the 1949 output of 26,288. The leading producer last year was General Base Metals Inc. with an output of 17,862 tonnes.

Exports during 1950 totalled 33,552 tonnes; 21,287 tonnes to Japan and 12,265 tonnes to the U.S.

Operations at the mines in the municipalities of Guindulman and Anda in Bohol Province have expanded

so rapidly that the Visayan Island now leads in manganese production in the Republic.

The following data on manganese deposits are based on a report published in *Minerals News Service*, U.S. Bureau of Mines.

For the year 1949, at an average rate of 50 tons per day, 6,409 tons of at least 45 per cent manganese content was produced, and for the first nine-and-a-half months of 1950, at the rate of 100 tons per day, 13,182 tons of 40 to 45 per cent manganese content was shipped by the company to Japan.

The pier in Guindulman, Bohol, has not been extended to the deep water, so that the ores are first loaded on barges and then pulled by small launches to Cebu where they are loaded, in turn, to steamers for shipment either to Japan or to the U.S. On account of present demand for manganese, the company is trying to double production for 1951 as this will give it a chance to mine and ship its low-grade ores.

DATA ON MANGANESE DEPOSITS

The manganese in the area is a secondary deposit occurring as residual concentration from the decomposition and weathering of the rocks in which it was originally formed. In Guindulman, the boulders of psilomelane assaying as high as 52 per cent manganese are found in the open cuts. The ores, consisting mostly of psilomelane and pyrolusite, are of two types: the fine high-grade ore and the low-grade washable ore. The fine high-grade ore is found in pockets surrounding some boulders. It also is found in fractures and cavities of limestone a few feet below the surface. It is locally termed "crude ore" and can be easily identified by its fineness and its grey-ash colour. It assays from 46 to 49 per cent manganese.

The low-grade ore is disseminated in the soil from the surface to a depth of about 15 ft. There are places where the grade of the ore is very low, and no amount of washing is possible to produce the desired concentrate.

The deposit of manganese in Anda area has been visited by a U.S. Bureau of Mines official and as exposed by test pits at every 10 to 20 metres distance, the overburden of reddish or brownish clay averaged 4 to 5 ft. thick. Below the overburden is an 8 ft. layer of low-grade manganese material, from 3½ tons of which one ton of shipping grade ore is obtained. Below this low-grade material is the "crude ore" with an average thickness of 5 ft. Lumps of manganese ores of 4 to 8 in. in diameter assaying as high as 58 per cent manganese are sorted from this low grade material for shipment to the U.S. Most of these deposits are extensively explored and developed by trenches and test-pits. The exact extent and size of the deposits have not been determined, but with the use of auger-test drills, the company will soon be able to make a close estimate of its ore reserves. However, in October, 1950, the shipping washed ore was roughly estimated to be 250,000 tons.

The mining of the ore in Bohol is done by open-pit. Stripping of the manganiferous soil is the first phase of the operation, and then mining separately of both the low-grade and the high-grade ores follows. The high-grade ores are easily broken by picks, put in jute bags, loaded on trucks and then hauled directly to the ore-bin at the wharf. The low grade ore, on the other hand, is first washed at the washing plant near the shore before it is delivered to the main ore-bin.

The washing plant is made up of six washing boxes, a small ore-bin and a water pump which conveys water from the sea to the boxes through a 4 in. pipe. As water passes through the boxes, the feed is agitated with shovels. From a feed of 4 tons of washable ore, a ton of washed ore or concentrate is obtained. The washed ore is then shovelled into a small ore-bin while the tailings are dumped into the sea. The cleaned product is hauled by trucks to the main ore-bin at the wharf. Not all the manganese is recovered by washing. About 30 per cent of the ores, mostly fines, goes with the tailings. Periodical sampling and analysis of both the crude ore and the washed ore is done so that the mixture of the two types will give the desired grade of shipping ore.

According to available records, 101,761 tons of manganese has been mined and shipped from the island of Busuanga (including Darab, Uson, and Lajo Islands). Of this total, 56,237 tons have been shipped since 1941 through the first half of 1950, making present positive reserves 47,763 tons.

Present cost of producing a ton of manganese, including cost of loading on ships in the ports around Busuanga Island, usually ranges from P18.50 to P22.50 a ton.

The Seleo Mining Co. is operating a manganese property in Lamit Bay district of Camarines Sur. A number of shipments of low-grade ore have been made to Japan since 1948. It is reported that development work is still exposing sgood hipping ore.

CHROMITE OUTPUT

Output of metallurgical-grade chromite declined from 81,404 tons in 1949 to 41,846 tons in 1950, whereas refractory-grade ore increased from 165,340 tons to 208,665 tons. Chromite is mined in Zambales and Oriental Misamis. In Zambales, Consolidated Mines, Inc. is operating at Masinloc and the Acoje Mines at Sta. Cruz. The Masinloc property is being operated by Benguet Consolidated Mining Co. and has reserves estimated at 9,000,000 tons. The Acoje Mining Co. produces high-grade ore. The property has been partly explored, and developed ore reserves as of 1949 were estimated at 700,000 tons with a minimum content of 48 per cent Cr_2O_3. The Luzon Stevedoring Co. and the Misamis Chromite Co., operating in Oriental Misamis, have a total ore reserve of 46,000 tons of 48 per cent ore. The Misamis Chromite Co. mine was virtually exhausted at the end of the year, and further development is doubtful. Other known chromite deposits are found in the following provinces: Ilocos Norte, Camarines Sur, Mindoro (Ambil Is.), Palawan, Antique, and Surigao. An unconfirmed report states that chromite has been found in Davao.

Exports of chromite in 1950 (in l.tons) included 226,423 to the U.S., 9,225 to other Western Hemisphere countries, 209 to Europe and Africa, and 400 to Japan, a total of 236,257 (234,620 in 1949).

Surveys conducted by the Bureau of Mines during the fiscal year 1949-1950 included the Lamin and Mati iron-ore deposits. The Lamin deposit, located 22 kilometres by air from Piddig, Ilocos Norte, is principally magnetite replacement of the metamorphosed limestone and shale of the region. Reserves are estimated at 1,260,000 tons, averaging 60 per cent iron and low in sulphur and phosphorous.These reserves can be increased 2,000,000 tons by diamond drilling. Inaccessibility of the mine ,which is in the heart of the Cordillera, and its distance from the nearest port (80 kilometres to Dirique, Ilocos Norte) tend to make exploitation unfeasible at this time. The Mati deposit has been known since 1941, but was examined only recently by the Bureau of Mines. Estimated ore reserves so far are 700,000 tons averaging 60 per cent iron. Only one of the five deposits has been examined.

Total estimated iron-ore reserves are 1,017,885,000 tonnes, 9,500,000 of which are reserves of companies now operating.

Iron-ore output during 1950 was 599,095 tonnes, 62 per cent more than the 1949 output of 370,172 tonnes. Exports to Japan in 1950 totalled 455,694 tons, compared with 283,726 tons in 1949.

Mineral Prospecting and Development in the Sahara

By MAURICE MOYAL

In the following brief article yet another part of the world is described where E.C.A.—more particularly its Strategic Minerals Division—is actively assisting in the development of strategic mineral resources. The potential mineral wealth of Algeria has long been recognized, and through Marshall Plan aid and French counterpart funds, its exploitation is now being undertaken on an unprecedented scale. Even more important, perhaps, is the start that is being made in probing the mineral secrets of the Sahara to which the author draws attention below.

Increasing U.S. demand for current requirements and for stockpiles, together with the loss of important sources of supply of certain strategic minerals, such as manganese from the U.S.S.R. and tungsten from China, have provided the E.C.A. with a powerful stimulus to search for new mineral resources. In recent months attention has been focused on its activities in French Equatorial Africa, in Northern Rhodesia and in Jamaica. In North Africa too, the E.C.A. has been breaking fresh ground—prospecting projects are now being carried out in the Sahara desert, and in the Tell-Atlas Mountains on the northern desert fringe. Plans are also under way for the modernization of the Algerian iron, phosphate and non-ferrous metal mines.

Geologists have long held that mineral deposits existed in the vast tracks of the unexplored Sahara, and when the first section of the Trans-Saharan railway was built from Bou Arfa to Colomb-Bechar, mining engineers found sufficient evidence of mineral wealth to confirm earlier beliefs.

SYSTEMATIC SURVEY OF THE SAHARA

The systematic surveying of the Sahara where the problems of supply and transport are formidable, is necessarily a slow and difficult operation, but for some time French desert explorers and American mining engineers have been carrying out prospecting projects in the "Great Western" erg where two camps have been established at Ougarta and Tebalba some 800 miles south of the Mediterranean coast and more than 300 miles from the nearest railway terminus.

As a companion project to the Sahara programme, prospecting is being carried out in the Tell-Atlas mountains by joint B.R.M.A.—E.C.A. crews operating from Philipville and Nedroma, who hope to discover new deposits of iron ore, phosphates and lead and zinc. Equipment needs vary greatly as between the Saharan project and that being undertaken in the Tell-Atlas mountains. To meet this difficulty, the E.C.A. is supplying a wide range of equipment including mobile compressors, geophysical apparatus and medium-sized drilling machinery which bores to about 1,500 ft. Geophysical instruments are very much to the fore and newly developed accoustical, electrical and seismographic testing methods are being used.

RE-EQUIPPING ALGERIA'S MAJOR LEAD MINE

Of a more concrete nature is E.C.A.'s programme for the modernization of existing Algerian iron, phosphate and non-ferrous metal mines. E.C.A. machinery to the value of $3,604,000 has been allocated to Algeria for this purpose as from January 1, 1951.

Algeria's major lead mine, at Mesloula, formerly mined on the gallery and underground chamber system, is now being converted entirely to open-pit operations with the aid of Marshall Plan machinery, and quarrying, washing and sorting machinery supplied through E.C.A. is being installed. Production is expected to rise substantially. The Ouenza open-pit iron mine (Algeria's largest ore producer) is also expected to raise its production through the introduction of E.C.A. machinery. Output is at present near the 1938 figure of 2,000,000 tons annually, but once the quarrying and drilling machinery, special tractors and compressors now being shipped from the U.S. are working, it is expected that output will reach 2,500,000 tons—the primary goal in the expansion plan. It is thought that Algeria in the near future might become one of the world's major sources of iron ore and if so would then be in a position to supply scrap required by the British steel industry.

Other Algerian iron mines are being modernized with the assistance of Marshall Plan aid, and a tungsten property is also being equipped. Anticipating, to some extent, the growth of its mining industry, new industries are starting, particularly in the Sidi-Aissa area, near Algiers, where oil is being produced. Here the Câblerie Electrique Africaine (Cablaf) has set up a modern factory which turns out braided and sheathed conductor wires and cables, and its sister-company, the Laminoir et Tréfilerie d'Afrique (Latraf) produces steel, copper and aluminium wires for telephone lines and cables for power, transmission. It also leans heavily on E.C.A. and is entirely dependent on E.C.A.-financed imports of copper wire bars (more than 3,000 tons a year.)

MARSHALL AID FOR ELECTRIC POWER DEVELOPMENT

In addition large allocations of Marshall Plan funds have been made towards the development of electric power resources.

Electrical power output is at present still far below consumption, although it rose from 288,000,000 kWh in 1938 to 510,000,000 in 1949. Plans call for an output of 700,000,000 kWh in 1952. In this programme is included the construction of large dams, which will serve the dual purpose of building up reserves of hydroelectric power and of irrigating extensive areas.

Finally, there is the prospect of good supplies of oil. After the war the "Soci.té Nationale des Recherches de Pétrole en Algerie" (S.N. Repal) was created at the instigation of the Algerian Government and began to investigate systematically about 400,000 miles in the Sahara desert and other parts of Algeria believed to contain oil. The company has obtained a $720,000 allocation through E.C.A. for prospecting, $500,000 for the purchase of new equipment and $220,000 for maintenance and replacement. This machinery is now being used for drilling in the Chelif Basin, midway between Algiers and Oran; in the Hodna Basin on the northern edge of the Saharan desert; and in the Sahara Basin itself. Productive oil wells have already been drilled in the region of Sidi-Aissa, not far from Algiers. Capacity of the new oil field averages about 40,000 barrels per day.

Machinery & Equipment

The Broomwade Type SV606 Sleeve-Valve Compressor

The May-June, 1951, *News Bulletin* issued by Broom & Wade Ltd., High Wycombe, contains a description of the Type SV606—500 cu. ft. model Sleeve-Valve Compressor, the latest addition to the company's range of compressors. It has six cylinders, 6½ in. bore by 4¼ in. stroke, arranged in two banks of three in V formation. This makes a compressor of extraordinarily neat and compact design for its capacity. The engine is a Ruston & Hornsby airless injection, cold starting, vertical six-cylinder Diesel, Mark 6 VPH, developing 132 h.p. at 1,100 r.p.m. which is the full load running speed of the plant. Starting is effected by a J.A.P. 600 c.c. petrol engine, mounted above the flywheel housing, the drive being by friction on to the engine flywheel. The engine is direct coupled to the compressor, and the drive is through an automatic centrifugal clutch. An automatic unloader is fitted, controlled by a standard Broomwade air governor. This unloads the compressor when the desired air pressure is reached in the receiver, and at the same times reduces the engine speed by operating the engine speed control. The engine is automatically speeded up, and the compressor again picks up full load when the pressure in the air receiver has dropped by a predetermined amount, a time lag being fitted to enable the engine to regain speed before the compressor is actually put on load.

Oil bath type of air cleaners are fitted to compressor and engine air intakes. Cooling of both compressor and engine is by single large radiator with pressed steel fan, and water pump circulation. The air receiver is 2 ft. 6 in. diameter by 5 ft. long, of welded construction, and tested to 210 lb. sq. in.

The chassis is an all-steel frame with sprung axles and tow-bar. Pneumatic-tyred wheels are fitted, and the brakes are internal expanding with a connection for remote control cable, and there is a hand parking brake.

Dimensions are: length (excluding towbar), 16 ft. 8 in.; height, 8 ft. 6½ in. Maximum width (over wheel hubs), 6 ft. 8 in. The weight complete with side sheets, but without fuel and water, is a little under 6½ tons.

On test, at continuous full load, the fuel consumption was 5¼ imperial gallons per hour.

Victor Flameproof Plugs

The Victor 100 Ampere Flameproof Plug (Restrained Type) manufactured by Victor Products (Wallsend), Ltd., Wallsend-on-Tyne, is designed primarily for use in mines, and is manufactured in accordance with B.S.279, for use in conjunction with sockets made to this specification. Most types of cables referred to in B.S. 708 can be accommodated and ony two sizes of glands are necessary to cover the whole range of individually or collectively screened and P.W.A. cables up to 2.03 in. overall diam.

The cable clamps, which include watertight packing rings, are located to the plug body and prevent the cable from turning when the gland nut is tightened.

Consideration has been given to an easy and efficient "make-off" of cable. A patented earthing washer ensures a sound earth connection and the screening or P.W. armouring is gripped between substantial clamps. The contact tubes are attached to the cores by grubscrew connections, or alternatively can be sweated.

During assembling or dismantling operations the insulator can remain in the plug barrel. When it is necessary to replace the insulator this can be effected by withdrawing from the rear end of the coupling body, without having to unscrew the plug barrel.

Belt System to Lift Iron Ore from Undersea Mine

A 1,730-ft. high belt system, comprising the world's longest and highest slope conveyor system, will soon be installed in a mine which extracts iron ore from beneath the floor of the Atlantic Ocean. Using belts designed by the Goodyear Tyre and Rubber Co. of Canada Ltd., a subsidiary of the Goodyear Co., Akron, Ohio, this new conveyor system will be installed in the Wabana mine of the Dominion Steel and Coal Corporation Ltd.

This mine is located three miles off-shore from Bell Island, and 1,600 ft. below sea level; it has been in operation for fifty years. Fifty years ago the loading of ore was done by hand, but subsequently mechanical equipment was installed and transport was handled by electric locomotives.

The complete lift belt system which features compass rope belts, will deliver 1,000 tons of ore p.h. up a slope 12,500 ft. long. It will consist of two flights 1,450 ft. long and of eight flights 1,230 ft. long. The belting will be 36 in. wide and will haul ore 575 ft. a minute. In addition to the main belt system, there will be two undersea screening, crushing and loading pockets discharging on to the same belt. The whole system will be automatically controlled.

Officials of Dominion Steel and Coal Corporation Ltd. estimate that the complete mechanization of operations will increase production of high-grade iron ore by more than three times the present rate.

Completion of this extensive mechanization and modernization programme, at an estimated cost of $6,000,000, will permit the company to ship 1,680,000 tons of ore to the United Kingdom market annually. Earlier this year, the company's subsidiary, Dominion Wabana Ore Ltd., signed a five-year contract with this country calling for 1,000,000 tons annually, commencing with the opening of the 1952 shipping season.

Griffin and Tatlock Apparatus

Griffin and Tatlock Ltd., Kemble Street, Kingsway, London, W.C.2, have just sent us a copy of their booklet GT.1385 on Super-Fractionation Apparatus, believed to be the most comprehensive booklet published in this country describing laboratory fractionating columns in commercial production. Two types of column are described, designated as the 18 in. x 17 mm. column and the 5 ft. x 20 mm. column (length by diameter of packed section), developed during research work early in the war by the Anglo-Iranian Oil Company and now released for general sale. It also deals with Fenske helices which are of particular importance where an all-glass system is required in corrosive conditions.

Delivery of new orders for columns, complete on stands with control panels, is estimated at three to four months and is governed largely by the delay in the supply of electrical components, which is lengthening due to the rearmament programme.

We have also received a well-produced illustrated Souvenir Catalogue from this firm, describing exhibits shown at the British Instruments Industries Exhibition held recently at Olympia. It gives details of pulverizing and stirring equipment, including the company's Vibratory Ball Mill and their Microid Atomill grinding to 300 B.S. mesh. Metallurgical equipment on view included *inter alia*: the Carbon-in-Steel Determination Apparatus, the Heavy-Element Tube Furnace, which can be run continuously at 1,150° C., and Microid Polishing Aluminas.

Balances, apparatus for gas and fuel analysis and laboratory equipment were also on view.

Metals, Minerals and Alloys

Increasing complaints are being heard from America that the United States has already handicapped itself with price controls, leaving Britain, France and other countries in a position to outbid the U.S. for supplies. The House of Representatives has approved an amendment to the new Defence Production Bill which would exempt metals and minerals certified by the Munitions Board as strategic and critical from price ceilings. It is estimated that some 30 or 40 metals and minerals might be affected, including copper, lead, zinc, tungsten and tin.

Copper.—The strike at the Garfield smelter of the A.S. & R.'s Co., continues and the negotiators at Washington dispersed last week-end; it is at present unknown whether they were merely taking a week-end holiday or whether the wage-talks had failed. Anxiety is not confined to the Garfield negotiations as other unions are awaiting the outcome to decide on whether they will take similar action. A continuation of the strike might become a disruptive influence in the Control of Materials plan. There was a "wild-cat" strike at the Raritan refinery of the International Smelting & Refining Co., last week and generally speaking copper labour in the eastern States is reported to be restless.

Recent events are seen as foreshadowing an advance in the domestic price to the world figure of 27½c. It has been reported that an official order permitting U.S. smelters to raise their ceiling price to the world figure on all refined copper produced from foreign ores and concentrates is only awaiting official signature, though no indication has yet come from Washington that the price for domestically-mined copper will be advanced from the present 24½c. The Finance Minister of Chile recently announced that agreement had been reached between his Government and the American companies which will give a new structure to their relations with the state and provide for increased output. The leading change is that the discriminatory rate of peso-dollar exchange is to be done away with, and that in return income tax will be increased to the rate of 67.3 per cent income tax on the companies' profits. 20 per cent of the production will be put at the disposal of the Chilean Government for sale on the free market. The two companies have agreed to invest $200,000,000 in the industry and to increase production to 600,000 s.tons a year. Chile's best production was 549,517 s.tons in 1944. In the past two years it has been around 400,000 s.tons.

Lead.—The coming into force of official lead allocation in the United States has been postponed by a month to September 1. Any prospect that this measure would clear the air and enable consumers and producers to get their bearings is thus postponed. Meanwhile the producers have opened their August lead bookings for civilian consumers with demand showing itself approximately double the supply. Mexican lead continues to move to Europe at 21½ to 22c. f.a.s. Gulf—an additional 3c. being required for sterling payment. The U.S. Government is expected to become the chief if not the sole purchaser of foreign metal and concentrates; in fact they may extend their tin purchase monopoly to all the non-ferrous metals.

Production in Tanganyika, though only insignificant at present, is expanding rapidly. Exports of concentrates in the first half of the year are reported as 1,600 tons compared with 1,000 tons for the whole of 1949, and a further 1,000 tons is said to be on the way to Belgium. This increase in exports reflects the increasing activity at the Mpanda mine.

U.K. imports of lead in June were 16,580 tons compared with 15,619 tons in May, and for the first six months of the year totalled only 58,154 tons as compared with 97,261 tons a year ago. Canadian shipments to the U.K. to the end of May are reported from Ottawa as 50,832 against 33,129 s.tons a year earlier.

Tin.—Malayan production in June was 4,656 tons making a total for the half-year of 28,015 tons. World tin production for the first half-year is discussed more at length in "Notes and Comments." Tin tended to ease in the free market until the news of the Bolivian Agreement, when it firmed up.

The R.F.C. quotation for Grade A tin remains at 106c. but Mr. Symington, chairman of the R.F.C., has stated that agreement in principle has been reached with Bolivian producers on a price of 112c. per lb. As this is above the current R.F.C. price of 106c.—the existence of which resulted in the recent notice to Dutch and Belgian interests of the termination of the U.S.A. purchase contract—any explanation of the higher price now said to be arranged with the Bolivians will be awaited with interest. In view of Mr. Symington's earlier denunciation of Bolivian, in common with Malayan, Indonesian and other producers, for "gouging" the United States, the price decision seems *prima facie* inconsistent. Until some further information is available, it would be premature to assume that the United States policy of depressing tin prices generally has been abandoned.

U.K. imports of tin in June were 406 tons making the total for the half-year 2,640 tons (1,922 tons in the first half of 1950). Imports of concentrates in June totalled 6,761 tons of which Bolivia supplied no less than 5,781 tons. Some of this presumably came out of stock as its equivalent in metal should be about 3,989 tons, whereas Bolivian exports for the first five months averaged about 3,000 tons. Total imports of concentrates for the half year were 21,852 tons compared with 19,218 tons a year ago. Portuguese exports for the first five months of the year are reported by our correspondent as 342 tonnes, of which 273 tonnes were destined for the U.K.

Zinc.—The Lord Privy Seal, Minister of Materials, qualifying his statement in the House of Commons on June 27 has said that any inference as to there being less need of producing zinc in the U.K. was erroneous; he considered that zinc was likely to continue to be in short supply, and stressed the need of alternative materials for use in galvanizing. The Ministry was taking action to increase the level of imports as rapidly as possible. This explanatory statement may be read in connection with the £30 a ton increase in price made last week. The U.K. price is equivalent to 23¾c. per lb., while the U.S. domestic price is unchanged at 17½c. Imports of zinc into the U.S. for the first five months of the year were only 39,177 s.tons as compared with 63,782 s.tons in the same period last year. The falling off in supplies was principally from Mexico and to a slighter extent from Canada. Zinc trading in the States is slow, pending the announcement of the August allocation.

U.K. imports in June recovered somewhat at 13,953 tons compared with 7,513 tons in May. Total for the six months was 54,760 tons compared with 75,895 tons a year ago. Canada supplied 16,891 tons, Australia 14,353 tons and the U.S.A. 12,837 tons. Imports of concentrates were 17,704 tons against 16,856 tons in May and for the six months totalled 70,581 tons compared with 78,353 tons a year ago.

Aluminium.—U.K. imports of aluminium in June were 18,257 tons (12,417 tons in May) making a six months' total of 67,550 tons against 66,457 tons a year ago; bauxite imports were 18,900 tons in June making a total for the six months of 146,679 tons against 109,657 tons a year ago.

Tungsten.—The imminence of the market monopoly by the Ministry of Materials has produced conditions in which buyers are prepared to purchase only at prices which they think will be more favourable than those ruling when the Ministry takes over. We have heard of only small business this week around 530s. to 535s. c.i.f.

U.K. imports of tungsten concentrates in June were only 246 tons with Portuguese supplies down to 25 tons. Our Portuguese correspondent mentions a rumour that the U.K. quota for the quarter July-August-September is exhausted, and that the Ministry of Supply was issuing no more import licences for that period. Later returns will probably show whither the shipments have been going. Portuguese exports for the five months to the end of May are given as 1,437 tonnes. In the United States the N.P.A. has been alarmed by the drain on the reserves of tungsten material which are now said to be "critically short." Despite strict controls the reserves are being reduced by some 400,000 lb. a month; accordingly the N.P.A. cut third quarter allotments to manufacturers by 25 per cent.

Molybdenum.—Imports of molybdenite concentrates in June were 277 tons making a total for the half-year of 1,173 tons compared with 1,528 tons a year ago. U.S. consumers who have been trying the substitution of molybdenite and cobalt for tungsten for high speed tool alloys report that they have found them "wholly unsatisfactory."

Nickel.—U.K. imports of nickel in June were 295 tons, and of concentrates and matte 3,930 tons making the respective totals for the half-year 2,378 tons and 18,882 tons.

The National Lead Co. has taken a substantial interest in the reactivated Nicaro Nickel Co. in Cuba now operated by the Nickel Processing Corp. under contract with G.S.A. and controlled by Billiton and Cuban national interests.

Quicksilver.—U.K. imports continue to be on a small scale, and amounted in June to 85,949 lb., making a total for the half-year of 740,911 lb. compared with 2,861,193 lb. a year ago. The U.S. price has been reduced by $4 to 206/208 per flask.

Antimony.—Antimonial concentrates imported into the U.K. in the first half of the year were 12,002 tons, nearly double the shipments imported last year which totalled 6,878 tons.

Cadmium.—U.K. imports in June were 131,559 lb. making a total for the half-year of 757,689 lb., against 523,984 lb. a year ago.

Chrome.—U.K. imports of chromite in June were 14,519 tons making the six months' total 70,327 tons against 61,996 tons a year ago.

Manganese.—U.K. imports of manganese in June were 33,872 tons and for the past six months 196,382 tons compared with 213,832 tons a year ago. The Gold Coast and India each shipped rather over 15,000 tons in June.

Sulphur.—U.K. imports of sulphur in June were low at 14,193 tons (58,790 tons in May) making a total for the half-year of 192,429 tons against 244,741 tons a year ago.

Titanium.—U.K. imports of ilmenite in June were 5,400 tons compared with 13,243 tons in May, and for the current six months 53,394 tons against 75,012 tons a year ago.

The London Metal Market

(From Our Metal Exchange Correspondent)

The only event of any interest which has occurred is the announcement from Washington that a price of $1.12 per lb., has been agreed with the Bolivians for ore delivered during June. The immediate reaction was a rise in Singapore followed by a bigger rise in London on buying by dealers.

As there are a number of special circumstances such as the necessity for maintaining regular supplies to the Texas Smelter, and the need for friendship between the U.S. and Bolivia, the price established should not be taken as an indication of what the Americans would pay for tin metal should they again enter the market, or even for the price to be paid for ore during the second half of this year. In general the tin picture remains unchanged with the half year figures of shipments from Malaya showing that these have been normal after the figures for the previous periods have been adjusted for movements of the U.K. Ministry stock. Consumption in the U.K. remains above average, although the holiday season is sure to have a noticeable effect during the next few weeks. Continental demand is very slight and orders from other parts of the world are of a spasmodic nature.

On Thursday the official close on the tin market was: Settlement price £895, Cash Buyers £890, Sellers £900; Three months' Buyers £855, Sellers £860. In the afternoon the market was easy. Turnover for the day was 185 tons. Approximate turnover for the week was 985 tons.

The Eastern price on Thursday morning was equivalent to £874 2s. 6d. per ton, c.i.f. Europe.

Iron and Steel

The Glasgow Fair holidays are ended and Scottish iron and steel plants are moving into production once more, though still on a limited scale. South of the border August is the principal holiday month and inevitably outputs will be adversely affected for a few weeks to come. Thereafter restoration of normal working should be rapid since the raw materials position is rather more hopeful. More tonnage is now available at the ore-loading ports and there has been an appreciable fall in Mediterranean ore freights. On the other hand, foreign scrap is still very scarce and in responsible circles there are ominous forebodings about industrial fuel supplies during the winter months. Strangely enough, while British outputs of iron and steel during the first half of the year have fallen below the peak figures for the corresponding period of 1950, all the countries in Western Europe have increased their production. It would appear that they have been much more successful than we in overcoming the shortages of raw materials.

However, British steel prices—despite the recent advances in export quotations—are still well below comparable figures for French and Belgian steel and the extent of the overseas demand, affords ample assurance that markets can be found for all the material which can be released for shipment abroad. The difficulty will be to equitably allocate available tonnages for re-armament and export, without serious detriment to the interests of all the steel using industries which are engaged on civilian production. Fearing a further restriction of supplies, as the work of re-armament gathers momentum, British steel users appear to be more reconciled to the prospect of a comprehensive rationing system.

The scrap situation is still very difficult. Imports of German scrap show no improvement and are now running at no more than about 25 per cent of last year's figures. Obviously more pig-iron will have to go into steel production and a good deal of interest is focussed on the attempt which is to be made to raise the output of iron by a million tons in the next 12 months. High phosphoric iron, which is the main raw material of the light castings industry, is rather more plentiful but haematite and low and medium phosporous irons are scarce and outputs of basic iron are fully absorbed.

Coal

The Ministry of Fuel and Power reports the output of coal for the week ended July 21 as 3,829,400 tons, as compared with 3,963,900 tons in the previous week. Distributed stocks for the week ended July 14 were 13,221,000 (12,881,000). The number of men on colliery books for the week ended July 14 was 701,100 (701,500).

JULY 26 PRICES

COPPER

Electrolytic ... ... £234 0 0 d /d

TIN

(See Metal Notes above for Thursday's Metal Exchange prices)

LEAD

Soft foreign, duty paid	£180 0 0 d/d
Soft empire, including secondary lead ...	£180 0 0 d/d
English lead	£181 10 0 d/d

ZINC

G.O.B. spelter, foreign, duty paid ...	£190 0 0 d/d
G.O.B. spelter, domestic	£190 0 0 d/d
Electrolytic and refined zinc	£194 0 0 d/d

ANTIMONY

English (99%) delivered, 10 cwt. and over	£390 per ton
Crude, (70%) ...	£305 per ton

NICKEL

99.5% (home trade)	£454 per ton

OTHER METALS

Aluminium, £124 per ton.	Platinum (scrap), £27.
Bismuth, 25s. 9d. lb.	Platinum, £27/£33 5s. nom.
Cadmium, 18s. 3d. lb.	Rhodium, £45 oz.
Chromium, 5s. 11d. lb.	Ruthenium, £30 oz.
Cobalt, 17s. 6d. lb.	Quicksilver, £73 10s./£74 ex-warehouse.
Gold, 248s. f.oz.	
Iridium, £65 oz. nom.	Selenium, 25s. nom. per lb.
Magnesium, 1s. 6d. - 2s. lb. according to quantity.	Silver (bar), 78¼d. f.oz. spot and forward.
Osmiridium, £35 oz. nom.	Tellurium, 19s. lb.
Osmium, £70 oz. nom.	
Palladium, £8 10s. oz.	

ORES, ALLOYS, ETC.

Bismuth	50% 15s. lb. c.i.f. 40% 14s.
Chrome Ore—	
Rhodesian Metallurgical (lumpy)	£11 per ton c.i.f.
" " (concentrates)	£11 per ton c.i.f.
" " Refractory	£10 12s. per ton c.i.f.
Baluchistan Metallurgical ...	£11 11s. per ton c.i.f.
Magnesite, ground calcined ...	£26 - £27 d/d
Magnesite, Raw	£10 - £11 d/d
Manganese, Best Indian ...	(Nominal)
Molybdenite (85% basis) ...	(Nominal)
Wolfram (65%), U.K. ...	530s./535s. f.o.b.
Tungsten Metal Powder (for steel manufacture) ...	34s. 9d. nom. per lb. (home)
Ferro-tungsten	32s. 9d. nom. per lb. (home)
Carbide, 4-cwt. lots	£30 3s. 9 d/d per ton
Ferro-manganese, home ...	£37 19s. 10d. per ton
Ferro-manganese, export ...	Nom.
Brass Wire	2s. 6½d.
Brass Tubes, solid drawn ...	2s. 0½d.

Mining Men and Matters

Mr. A. B. MacLaren will resign from his position as general manager of Roan Antelope Copper Mines on September 30, 1951, to take up the appointment of general manager at Mufulira Copper Mines. **Mr. J. Thompson,** manager, has been appointed to succeed Mr. MacLaren as general manager.

Mr. D. G. Nairn has tendered his resignation to the board of Thistle-Etna Gold Mines in pursuance of his wish to curtail his business commitments.

Mr. L. Tucker will retire as general manager of Mufulira Copper Mines on September 30, 1951, but will assume other duties in Rhodesia on behalf of Mufulira Copper Mines and associated companies.

Mr. Anthony Wilson has been appointed a director of De Beers Consolidated Mines.

Business Items

Mr. W. F. Becker has been appointed a deputy chairman of the Bank of British West Africa.

Sir Frederick Leith-Ross and **M. Jean Louis,** president of Société Française des Constructions Babcock & Wilcox, Paris, have been elected directors of Babcock & Wilcox.

Mr. R. W. Richard has resigned from the board of Brush Electrical Engineering, and **Mr. Miles Beevor** has been elected a director and appointed deputy managing director.

Uganda Mineral Output in 1950.—The following minerals were produced in Uganda in 1950: gold, 590 oz. troy; tin, 264 l.tons; wolfram, 186 l.tons; amblygonite, 26g l.tons; lead, 53 l.tons; beryl, 16 l.tons; bismuth, 7 l.tons and niobium, tantalum, 5 l.tons.

Egypt's Gold Imports, 1950.—Egypt's gold imports in 1950 totalled 32,226 kg. valued at £E.16,200,000, states *Le Commerce du Levant*, published in Beirut, Lebanon. The main sources were Holland (8,050 kg.) and France (5,385 kg.), or together over 40 per cent of the total. Other suppliers were Saudi Arabia (3,503 kg.), the United Kingdom and the United States. No gold exports from Egypt were recorded last year.

Northern Rhodesia Mineral Production in March.—During March, Northern Rhodesia produced the following minerals: cobalt alloy (37.63 per cent Co.), 2,665 cwt.; copper (blister), 13,252 tons; copper (electrolytic), 10,373 tons; lead, 1,200 tons; tin concentrates (70 per cent Sn.), 21 tons; zinc, 1,900 tons; limestone, 10,130 tons; mica (sheet), 756 lb.

In the first quarter of 1951, Northern Rhodesian mineral production was provisionally valued at £14,995,834, compared with £9,515,949 for the corresponding period of 1950.

S. African Mineral Output for April.—Gold, 948,458 f.oz.; silver, 97,505 f.oz.; diamonds (not available); coal, 2,680,102 s.tons; copper, 3,230 s.tons (99.37 per cent), 60 tons in matte and concentrates; tin, 106 s.tons (66.86 per cent); platinum concentrates, 197 s.tons (45.99 oz. per s.ton); ditto (crude), 21,901 oz. (21.62 per cent); asbestos, 8,576 s.tons; chromite, 52,495 s.tons (44.84 per cent); manganese, 75,868 s.tons (41.01 per cent); lead, 79 s.tons (74.98 per cent).

Cyprus Mineral Exports in April.—The following are the official figures of mineral exports in April last. Iron pyrites, 40,837 tons (£120,873); cement copper, 599 tons (£54,900); cupreous pyrites, 5,040 tons (£26,050); chromite, 2,000 tons (£25,000); umber, 81 tons (£859); gypsum, 35 tons (£97).

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The Mining Markets

(By Our Stock Exchange Correspondent)

Markets have had a disturbed and depressing week. The news of the assassination of King Abdullah of Transjordan cast a general gloom, the concensus of opinion being that Britain has lost a good friend.

Latest figures show a considerable widening of the export import gap, which again brings home the serious international trade situation. The contents of Mr. Gaitskell's speech on Thursday, July 26, will not be known until after going to press. The stock markets have however been subdued, buyers mainly holding off in fears that some form of dividend limitation might again be introduced to placate the Government's Left Wing.

Annual statistics published by the Stock Exchange Council and valued as on April 2, indicate that a total of 9,706 securities were dealt in on that date to a total value of £26,991,000,000. Out of this total mining securities number 466 having a market value of £1,567,000,000. The total market value of mining shares rose by £245,000,000 over the year.

Barriers turned easier. Consolidated Zinc announced that following a dispute over two workers, the unions concerned have withdrawn all underground labour at the Zinc Corporation and New Broken Hill mines.

The details of the Mount Isa Mines bid for Mining Trust have now been announced. Shareholders in the latter company are offered a capital repayment of 1s. per share, and one Mount Isa share for every seven Mining Trust shares. The offer is subject to Treasury sanction of the transfer of Mining Trust to Australia, and 90 per cent acceptance by shareholders. Mount Isa may however waive any of these conditions if it sees fit. This makes Mining Trust shares worth about 7s. 4½d. at the current market price of Mount Isa shares.

A fully representative conference is to meet at Sydney on July 30 to try to find means of combating inflation in Australia. Prices of Australian Gold Shares again turned easier on fears that inflation and shortage of labour will cut heavily into earnings. It is to be hoped that the Commonwealth Government will take measures at an early date to protect the industry. Sons of Gwalia report a fall in production of 1,840 oz. of gold for the first 24 weeks of the current year. This is partly attributed to the breakage of the crankshaft on the main winder.

Among Kaffir shares prices were on the whole firmer but little public interest was reported. Rumours of good developments, later confirmed, caused a sharp rise in Spaarwater. Of 2,820 ft. sampled during the quarter 41.8 per cent was payable, giving an average value of 7.7 dwt. over 36 in. equivalent to 277 in. dwt. It is hoped that this new development will go some way towards sustaining the precarious ore reserve situation.

Figures published by the Chamber of Mines for the first six months of 1951 indicate that average Rand working costs per ton milled was 31s. 7d. as against 29s. for the same period last year. This means that about 52 per cent of the benefit gained from devaluation has already disappeared.

Diamond shares had a rather better week after their recent shake out. The yields in this group are of the calibre to attract the bolder invester. It remains to be seen how the recently reported rupture between Dr. Williamson, the Tanganyka diamond mine owner, and Sir Ernest Oppenheimer's Diamond Sales Corporation will affect the market. Rumour credits Dr. Williamson as having almost completed negotiations for the sale of diamonds to the United States when his agreement with the Diamond Sales Corporation expires in December. Dr. Williamson's company is further reported to have a stockpile of diamonds to the value of about £3,000,000.

	Price July 25	+ or — on week
FINANCE		
African & European	3⅛	+ ⅛
Anglo American Corpn.	7⅜	
Anglo-French	23/1½	
Anglo Transvaal Consol.	37/6	
Camp Bird	13/1½	−1½d
Central Mining (£1 shrs.)	42/6	−1/-
Consolidated Goldfields	2⅛	
Consol. Mines Selection	35/-	
East Rand Consols	4/-	−3d
General Mining	5⅛	+ ⅛
H.E. Prop	37/6	
Henderson's Transvaal	9/6	
Johnnies	3⅛	+ ⅛
Rand Mines	6⅛	+ ⅛
Rand Selection	41/10½	+1/10½
Union Corporation	9⅛	
Vereeniging Estates	6⅛	+ ⅛
Writs	33/-	+1/-
West Wits	2⅛	+ ⅛
RAND GOLD		
Blyvoors	48/9	+7½d
Brakpan	19/-	+3d
City Deep	2⅜	− ⅛
Consol. Main Reef	2⅛	− ⅛
Crown	4⅛	+ ⅛
Daggas	3⅛	+ ⅛
Dominion Reefs	1/9	
Doornfontein	30/-	+1/3
Durban Deep	3⅛	+ ⅛
E. Daggas	24/4½	
E. Geduld ... (4/- units)	2⅛	
E. Rand Props	3⅜	+ ⅛
Geduld	7⅛	+ ⅛
Grootvlei	37/6	+7½d
Libanon	16/6	+3d
Luipaards Vlei	21/6	+3d
Marievale	21/-	
Modderfontein B	5/6	
Modderfontein East	2⅛	− ⅛
New Kleinfontein	32/6	
New Pioneer	25/-	+1/3
Randfontein	17/9	
Robinson Deep	13/6	
Rose Deep	36/10½	
Simmer & Jack	6/4½	+1½d
Springs	9/7½	
Sub Nigel	3⅛	
Van Dyk	13/9	−9d
Venterspost	30/-	+7½d
Vlakfontein	18/-	
Vogelstruisbult	26/3	
West Driefontein	6⅛	+ ⅛
W. Rand Consolidated	41/10½	+1/3
Western Reefs	40/-	+1/3
O.F.S.		
Alpha F.S.A.	13/3	+9d
Blinkpoort	24/4½	+7½d
Central Mining F.S.	5/-	+3d
Freddies	12/9	+6d
Freddies N.	12/1½	+1½d
Freddies S.	13/4½	+1½d
F.S. Geduld	3⅜	+ ⅛
Geoffries	29/-	+3d
Harmony	25/-	+1/3
Lydenburg Estates	11/3	+6d
Middle Wits	23/6	+6d
Ofsits	2⅜	+ ⅛
President Brand	22/3	+9d
President Steyn	19/3	+1/-
St. Helena	30/7½	+7½d
T.F.S.C. & G.	10/-	+1/3
Virginia Deb.	71/-	+ ½
Virginia Ord.	14/3	+3d
Welkom	39/4½	+7½d
Western Holdings	3⅜	+1/3
WEST AFRICAN GOLD		
Amalgamated Banket	2/3	
Ariston	7/3	
Ashanti	28/-	
Bibiani	10/-	
Bremang	3/1½	
G.C. Main Reef	3/6	−1½d
G.C. Selection Trust	9/3	−3d
Konongo	1/9	+1½d
Kwabu	4/-	
London & African Mng.	2/4½	+1½d
Lyndhurst Deep	1/-	−1½d
Mali	2/4½	
Nanwa	10d	
Taquah & Abosso	7/-	
AUSTRALIAN GOLD		
Boulder Perseverance	3/3	−1½d
Gold Mines of Kalgoorlie	14/9	−10½d
Great Boulder Prop.	6/3	−6d
Great Western Consol.	2/9	
Lake View and Star	19/9	−9d
Mount Morgan	19/3	−9d
North Kalgurli	17/9	−9d
Paringa	9d	
Sons of Gwalia	11/3	
South Kalgurli	10/3	
Western Mining	7/3	−6d
Wiluna	11/6	+3d
MISCELLANEOUS GOLD		
Cam and Motor	33/9	+9d
Champion Reef	10/-	
Falcon Mines	11/9	
Globe & Phoenix	23/-	
MISCELLANEOUS GOLD (contd)		
G.F. Rhodesian	8/9	+3d
London & Rhodesian	6/1½	−1½d
Motapa	2/8	
Mysore	6/6	
New Guinea	1/6	−1½d
Nundydroog	8/-	
Ooregum	3/6	
Oroville	12/-	
St. John d'El Rey	42/6	+3/9
Zams	33/6	
DIAMONDS		
Anglo American Inv.	4⅛	+ ⅛
Casts	36/6	
Cons. Diam. of S.W.A.	3⅛	
De Beers Defd. Bearer	59/3	+2/3
De Beers Pfd. Bearer	17	+ ½
COPPER		
Chartered	71/-	−4½d
Indian Copper	4/6	+1½d
Messina	5⅛	+17/6d
Nchanga	7 25/64	+5/64
Rhod. Anglo-American	60/6	+1/6
Rhodesian Selection	19/6xd	−19/4½
Rhokana	21/-	+ ½
Rio Tinto	21⅛	+ ⅛
Roan Antelope	11/-xd	−9/6
Selection Trust	51/-	−1/6
Tanks	48/3	+6d
Tharsis Sulphur Br.	48/9	
TIN (Eastern)		
Anglo-Burma	2/9	−6d
Ayer Hitam	29/-	+1/-
Berlin	34/6	+6d
Gopeng	14/3	+3d
Hongkong	11/3	−3d
Ipoh	28/1½	
Kamunting	13/6	+1½d
Kepong Dredging	12/9	+7½d
Kinta Tin Mines	15/6	
Kramat Pulai	4/4½	
Malayan Dredging	24/9	+3d
Pahang	15/9	+3d
Pengkalen	11/-	
Petaling	12/4½	+1½d
Rambutan	17/3	
Siamese Tin	23/4½	+1½d
Southern Kinta	14/-	−3d
S. Malayan	28/9	
S. Tronoh	22/4½	
Sungei Kinta	19/-	
Tekka Taiping	7/-	
Tronoh	28/7½	
TIN (Nigerian and Miscellaneous)		
Amalgamated Tin	10/9	+9d
Beralt Tin	26/-	−1½d
Bisichi	4/-	
British Tin Inv.	17/3	−9d
Ex-Lands Nigeria	6/9	
Geevor Tin	16/10½	+7½d
Gold & Base Metal	4/-	+6d
Jantar Nigeria	7/-	+6d
Jos Tin Area	11/-	+6d
Kaduna Prospectors	4/-	
Kaduna Syndicate	6/-	
London Tin	5/8	+1½d
Ribon Valley	1/1½	
United Tin	2/8	
SILVER, LEAD, ZINC		
Broken Hill South	55/7½	+7½d
Burma Corporation	3/10½	−1½d
Consol. Zinc	32/9	−1/1½
Lake George	26/9	−10½d
Mining Trust	6/9	−7½d
Mount Isa	45/-	−1/9
New Broken Hill	29/3	−9d
North Broken Hill	73/-	+6d
Rhodesian Broken Hill	21/6	+4½d
San Francisco Mines	33/-	−3d
Trepca	4/-	−3d
MISCELLANEOUS		
BASE METALS & COAL		
Amal. Collieries of S.A.	63/-	−3d
Associated Manganese	70/6	+5/-
Chinese Engineering	2/6	−3d
C.P. Manganese	50/6	−6d
Natal Navigation	5⅛	
Wankie	23/4½	−1/-
Witbank Colliery	3⅛	
CANADIAN MINES		
Dome	$28½	
Hudson Bay Mining	$112½	
International Nickel	$74⅛	+ ⅛
Mining Corpn. of Canada	£6	− ⅛
Noranda	$137	+2
Quemont	£8	− ⅛
OIL		
Anglo-Iranian	5⅛	+ ⅛
Apex	49/-	−1/-
Attock	25/7½	
Burmah	65/-	
Canadian Eagle Bearer	35/-	+1½d
Mexican Eagle	25/6	+1/-
Shell	4⅛	− ⅛
Trinidad Leasehold	29/4½	+4½d
T.P.D.	42/6	
Ultramar	34/6	−1/-

Company News & Views

East Rand Consolidated Sorts Out Its Portfolio

The principal interests of East Rand Consolidated are in the Far Eastern Rand and in the O.F.S., although its investments cover a wider field and include West Africa and Rhodesia. During 1950 the company made every effort to dispose, where practicable, of those of its shareholdings which were either non revenue bearing or did not in the opinion of the directors and their advisers have reasonable prospects. The result of sorting out its investment portfolio was that a net loss of £13,901 was incurred, and after taking into account normal running expenses and crediting revenue from dividends, interest, etc., there was a working loss on the year's operations of £17,403. However, it should be noted that income from dividends and revenues at £9,475 showed an increase of 50 per cent over the previous year's receipts from these sources of £6,394, which advance, although small in relation to the company's issued capital of £1,500,000 would seem to confirm the advisability of the company embarking on its new investment policy.

During the year, East Rand Consolidated substantially increased its holding in Falcon Mines and also added to its holding in New Free State Consolidated Co., which has a large interest in Harmony Gold Mining Co. On the other hand, its Trinidad interests have been written down to a nominal figure due to the lack of interest taken in the potentiality of the large freehold area in which it had in the past purchased an interest.

Naraguta Karama and Naraguta Extended

The report and accounts of both Naraguta Karama Areas and Naraguta Extended Areas for the year ended December 31, 1950, have many features in common. In the case of both companies production of tin ore declined, mining costs increased and taxation liabilities were heavier, but the higher prices realized for their output enabled their respective tin revenues to advance sufficiently to absorb these outgoing payments as well as to pay higher dividends, substantially strengthen their reserves and to increase their forward balances.

Company	Year to Dec. 31	Tin Output (tons)	Tin Revenue £	Mining Costs £	Tax £	Net Profit £	Dividend %
Naraguta Karama	1949	162½	67,897	54,430	5,050	4,225	5
	1950	154½	113,088	67,744	23,350	18,451	9
Naraguta Extended	1949	169	71,299	39,158	14,500	12,159	8
	1950	136	92,346	46,844	23,350	16,966	9½

Naraguta Karama strengthened its reserves by the addition of £11,500 against only £1,500 previously, and the forward balance at the year-end of £4,025 was more than double the £2,006 previously brought in. Naraguta Extended Areas recorded a somewhat similar situation in its profit and loss account; the sum of £9,530 against £6,000 being transferred to reserves, while its forward balance was higher by £107 at £2,888.

Mr. Herbert T. Skipp, chairman of both companies, informed shareholders of Naraguta Karama that prospecting, which was directed to the proving of further reserves, resulted in an additional 56 tons. The estimate of the company's proved reserves at the fiscal year-end was 590 tons compared with 575 tons previously.

In his review of Naraguta Extended Areas, the chairman said that as a result of the year's prospecting operations, 90 tons were added to reserves, the estimate of which at the end of 1950 was 418 tons against 351 tons previously.

Both companies have declared interim dividends in respect of the current year, 3½ per cent, less tax, being declared by Naraguta Karama Areas and 6 per cent, less tax, by Naraguta Extended Areas.

Amalgamated Metal Corporation—Expansion of Group Activities

The Consolidated Profit and Loss account of the Amalgamated Metal Corporation for the calendar year 1950 showed that net profit after meeting tax liabilities amounting to £252,996 (£295,419) declined to £223,982 compared with £297,958 previously. The dividend was raised from 6 per cent to 7 per cent on the ordinary shares, which absorbed a net amount of £163,015, and the payment on the 6 per cent cumulative preference shares required a net amount of £29,700. After meeting these and all other charges the balance of undistributed profits for the year was £31,267 compared with £111,877 previously.

Referring to the widespread activities of the group, the Chairman, Mr. Walter Gardner, said that the associated company in Australia had expanded its operations by opening an office in Melbourne, Australia; and in conjunction with the Wolverhampton Metal Co. had recently formed a company to take a share in the expanding scrap and secondary metal business in that country.

During the current year, the British Metal Corporation had sold the entire share capital of Huntington, Heberlein and Co., to Simon Carves, while in the latter part of 1950, in conjunction with a well-known mining concern it exercised an option for the purchase of an asbestos property in Southern Rhodesia. Two further events of importance are also referred to by the Chairman. In conjunction with Messina (Transvaal) Development and another mining concern, the British Metal Corporation has taken an investment in the capital of Rhodesia Copper Ventures. Finally, the Chairman informs shareholders that the B.M.C. and Henry Gardner and Co. have decided to open a joint office in Karachi to be known as British Metal Corporation (Pakistan), to handle metals, ores and general merchandise.

Company Shorts

Johnson Matthey's Announce Price for Share Offer.—The impending issue of 737,776 ordinary shares by Johnson Matthey and Co., to which reference was made in our issue of last week is calculated to raise over £2,000,000 of new money. The issue will be made to ordinary shareholders on a one-for-one basis and to loan stockbrokers in the ratio of one share for every £3 12s. nominal of 3½ per cent loan stock. The shares are to be issued at a price of 58s. per share.

Anglo-Burma Tin, Deteriorating Conditions.—The Anglo-Burma Tin Co. has announced that there has been no improvement in the lawless conditions existing in the Tavoy district of Lower Burma, where the Heinda Mine is situated. If anything, it is stated, conditions have deteriorated further.

Production for the final quarter of the financial year ended May 31, 1951, has, therefore, been negligible—approximately 6 tons of ore tin which was cleaned up in the early part of March. Attempts are being made to carry out organised tributing operations under the supervision of senior members of the Asian staff, and a small quantity of ore has been obtained in this manner during June.

South Bukeru Pays 12½ per cent.—South Bukeru Areas report and accounts now published for the year 1950 show that tin ore production fell to 52¾ tons compared with 75¼ tons for the previous year, but some 8 tons of columbite containing concentrate were produced, which compares with 5 tons for the previous year. The higher prices realized for its tin production yielded £42,775 against £30,721 previously, and was the major item making up gross revenue which amounted to £45,263 against £32,614 previously. Taxation was much heavier at £8,400 (£3,675), as were mining costs which advanced to £28,320 against £23,641, and after these and all other outgoing payments had been met, net profit for the year figured at £6,300 compared with £3,247 previously. Dividend distributions aggregated 12½ per cent against 10 per cent, the sum of £3,500 compared with £1,500 was transferred to reserves, leaving the carry forward higher at £2,808 compared with £1,998 previously.

NCHANGA CONSOLIDATED COPPER MINES

INCREASED PRODUCTION, SALES AND PROFITS

The Fourteenth Annual General Meeting of Nchanga Consolidated Copper Mines Ltd. will be held in Northern Rhodesia on August 8.

The following is an extract from the statement by the Chairman, **Sir Ernest Oppenheimer,** circulated with the report and accounts for the year to March 31, 1951:—

The transfer of this company's control from the United Kingdom was effected with a view to bringing the seat of management and control to the territory where the mining operations are carried on, so as to secure increased administrative efficiency; a further benefit resulting from the move was the avoidance of the very heavy burden of United Kingdom income tax and profits tax which, in the case of your company, were payable on profits arising almost wholly in Northern Rhodesia, and in relation to capital which to a considerable degree is held outside the United Kingdom.

The dividend rate of 37½ per cent is not strictly comparable with that of 20 per cent paid for the previous year, which would have been expressed at a considerably lower rate had it been paid under the same special circumstances as apply to this year's dividend.

EXPANSION OF PRODUCTION

It is worthy of note that during the latter part of the year under review, production of copper was running at the increased rate envisaged in the 1947 extensions programme. Sales were increased and profits were further augmented by the rises which occurred during the year in the price of copper. The increased rate of production has also enabled unit costs to be kept down in a period of rising price levels.

In order to maintain this increased rate of production adequate coal supplies must be available. It will be noticed from the directors' report that the average deliveries to the copperbelt during the year ending March 31, 1951, although a little in excess of those for the previous year, were substantially below the average deliveries for April and May, 1950, and since March, 1951, the position has deteriorated further. This shortage has already been responsible for delay in commissioning of the leach plant, which means that the proportion of the company's production which it was expected would, by this time, have been produced in the form of cathodes from the leach plant, is having to be smelted and marketed as blister. On the basis of foreseeable coal supplies it may be difficult to maintain the overall production of copper for the remainder of the year.

COST OF EXTENSIONS

Members will recollect that Mr. S. S. Taylor, in his speech at the last annual general meeting, gave details of the proposals for further increasing the company's production from 64,000 l.tons per year, provided by the 1947 extensions, to 108,000 l.tons. Construction work on these further extensions, known as the third stage extensions, was commenced during the year under review and will, it is hoped, be completed towards the end of 1952, although owing to increased supply and transport difficulties, it is possible this date may prove to be unattainable.

The estimated total cost of these extensions was stated last year to be £5,700,000. Since that time a new forecast has been made of the future milling grade of ore, and in consequence it has been decided that the fourth unit of the leach and electrolytic plant will not now be required, though it will be necessary to instal additional washing and flotation plant in the concentrator. The revision of requirements for the third stage extensions programme is expected to reduce the cost substantially.

It is the intention to finance this and other capital expenditure commitments in part out of profits but mainly by raising fresh capital, and consideration is now being given to the form the additional finance should take. As a first step in providing finance out of profits £700,000 has been transferred to general reserve during the year under review.

It will be noted from the consulting engineers' report that the ore reserves at March 31, 1951, were estimated to be approximately 137,000,000 tons, averaging 4.65 per cent copper, including approximately 43,000,000 tons in respect of the Nchanga West ore body. The latter figure is based on a reserve calculated in 1931 and includes only part of the known ore contained in the Nchanga West ore body, the balance being excluded because insufficient drilling had been done to justify an attempt to calculate the tonnage and grade with accuracy. A further drilling programme is now in progress with a view to making good the deficiency in the original borehole pattern and when this is completed it is intended to make a revaluation of this portion of the reserve.

RHODESIA BROKEN HILL DEVELOPMENT

RECORD SALES AND PROFITS

The Forty-First Annual General Meeting of The Rhodesia Broken Hill Development Co. Ltd., will be held in Northern Rhodesia on August 8.

The following is an extract from the statement of the chairman, **Sir Ernest Oppenheimer,** circulated with the report and accounts for the year to December 31, 1950:

The year under review was again a very successful one; in fact the sales proceeds and the resulting profits earned by your company both constitute a record. The demand for your company's products, particularly zinc, continues to be very strong. It is well known that this pressure of demand arises largely from requirements for stockpiling purposes and for the present rearmament programmes which, however much the necessity therefore may be deplored, cannot be questioned as being essential to the safety of the Western world.

There are two principal reasons for transferring the seat of control from the United Kingdom. In the first place it was evident that an increase in administrative efficiency could be effected, and in the second it was possible to make a very substantial saving in taxation by obviating the amount payable in the United Kingdom by way of income tax and profits tax. Since virtually the whole of the company's profits are made in Northern Rhodesia and an important part of the capital of the company is held outside the United Kingdom, this move was considered entirely justifiable.

THE DIVIDEND

The dividend payable in respect of the year under review will be regarded as a free of tax dividend by the United Kingdom revenue authorities. Thus, although the declared rate of dividend for 1950 is 45 per cent against 40 per cent for 1949 it is necessary, in order to obtain a true comparison of the two dividends to express the dividend for the earlier year in similar terms, and on this basis it would have amounted to 22 per cent. This is a non-recurring feature arising from the change of control and briefly, is due to the fact that the dividend is payable in respect of the final year during which the company was assessable to United Kingdom taxation (although by reference to the results of earlier years) and is therefore deemed to be a distribution of taxed profits.

The measure of the taxation benefits arising from the change of control is given by a comparison of the proportion of profits absorbed by tax in the two years 1949 and 1950; the accounts show these figures to be approximately 54 per cent and 36.5 per cent. This saving is due partly to the lower rate of income tax payable by the company, and, to a greater extent to the fact that it is no longer liable for the payment of profits tax which, incidentally, in terms of the United Kingdom 1951 Finance Bill, is due to be increased still further to 50 per cent on distributed profits.

RISING COSTS

The current pressing demands for raw materials, plant, and machinery occasioned by rearmament programmes necessarily affect the supply of new plant, with the inevitable result that costs are rising and delivery dates are being put back. I emphasize this point as it very largely accounts for the anticipated cost of new plant installations now being considerably higher than was envisaged when the extensions to this company's lead and zinc plants were first put in hand. So far as the latter extensions are concerned, however, alterations in design referred to in the directors' report have added considerably to the cost, although to a certain extent this represents a reallocation of expenditure and does not add to the overall capital commitments.

Originally it was considered that the new leaching plant would not be an integral part of the zinc plant extensions, but it is now clear that it will in fact be required for the additional recovery of zinc under the extensions scheme.

The production of fused vanadic oxide recommenced in April of this year. As a result of the serious world shortage of sulphur consideration is at present being given to extending the activities of the Iron Duke mine with a view to supplying pyrites, hitherto used only in the company's own works and on the copperbelt, to large scale users in the Union of South Africa. Metallurgical investigations are proceeding with a view to determining whether your company should undertake the production of refined cadmium which it appears might be obtainable from the zinc plant purification residues.

Without venturing to forecast results for the current or future years I feel I am justified in stating that the profits for this year show a substantial improvement on those for the corresponding period of last year and that there is every indication that this improvement will continue.

SONS OF GWALIA

IMPROVED RESULTS

The Fifty-Fourth Annual General Meeting of Sons of Gwalia Ltd. was held on July 24 at Winchester House, London, E.C., **Capt. A. H. Moreing, Assoc.M.Inst.C.E.,** chairman of the company, presiding.

The Chairman said:

Gentlemen, it was a great pleasure to the Board that the improved results for the past year have allowed the directors to recommend an increase in the rate of dividend. To begin with I would like to draw your attention to certain figures in the accounts and the report of our general managers.

You will see that the output of gold increased by 2,056 f.oz. and the revenue from gold sold by £85,737. This increase of revenue is largely due to the fact that we benefited by the increased price of gold for the whole 12 months under review instead of only a part of the year in 1949.

I would like also to draw your attention to the fact that our liquid assets have risen during the year by £40,631; of this increase £20,000 is in tax reserve certificates.

If we look at the figures for the three years 1948, 1949 and 1950 the improvement in the company's financial position is very striking. In 1948 we made a loss of £16,245, mainly due to shortage of labour, and which was met by drawing on the balance to the credit of the profit and loss account, reducing the carry-forward to £16,117.

In 1949 we made a profit of £27,909 and were able to carry forward £21,158 after paying a dividend of 1s. per share. Last year we made a profit of £62,653 and, after paying the dividend of 2s. provided you approve our recommendation so to do, the carry-forward will be increased to £26,786.

In addition in 1949 and 1950 we have written £11,000 off our investments and have provided £10,000 for depreciation of machinery, plant and buildings. This asset now stands in our books at £93,247, a figure much below its value to us as a going concern.

The other figures to which I would like to draw your attention are contained in our general managers' report. The working costs at the mine, excluding development, in 1950 were 46s. 2.39d. per ton and in 1949 were 41s. 9.62d. per ton, an increase of 4s. 4.77d. per ton. This is an increase of approximately 10 per cent, which figure compares favourably with the general experience of the gold mining industry as a whole, and reflects great credit on the management.

You will see that expenditure on development has risen, compared with 1949, from £6,641 to £13,487 but while this represents a doubling of the expenditure under this head, the amount of development work done rose from a total of 556 ft. to 1,548 ft., so that three times the footage was done for only twice the expenditure.

I do not think it necessary for me to go at length into technical details as these are given in the general managers' report, but perhaps I should say a word about the hanging wall ore bodies to which I made reference in my speech last year. Since I addressed you a considerable amount of development work has been done and it now seems that they may not prove to be extensive but should yield a fair tonnage of ore of a grade at least equal to our general ore reserve figure. They do however possess the advantage that the amount of dead work to be done in making them available is very small and inexpensive.

We are steadily modernizing several sections of the treatment plant, but this is being done slowly so as to spread the expenditure as much as possible.

The supply of labour at the mine is always a source of anxiety but it is never out of our minds and everything is being done to increase it.

It would appear that the world is caught in an inflationary spiral and wages and prices of materials are constantly rising. This is a source of anxiety, as the price at which we can sell our product is fixed. Apart from an increase in the price of gold, which can only be effected by action of Governments in the United States and elsewhere, the only thing which your directors and general managers can do is to exercise constant vigilance and the figures I have given will show that their efforts are not entirely unsuccessful.

In conclusion I would like to point out that while the amount of the proposed dividend is, net, £17,063, the provision for taxation is £35,000; in other words, double. This is a very serious state of affairs. It is unfair to the shareholders, who take the risk, and it prevents the company also from building up adequate funds to provide for replacement of plant when worn out and for any unforeseen contingencies.

Finally, I would like to convey our best thanks to our general managers, their representative in Australia, the superintendent and the staff at the mine and the men for their loyal and efficient service during the year.

The report and accounts were adopted.

KINTA TIN MINES LTD.

Mr. R. C. SAVORY'S STATEMENT

The Fiftieth Annual General Meeting of Kinta Tin Mines Ltd. was held on July 25 at the Registered Offices, 65 London Wall, E.C.2.

Mr. R. C. Savory, Chairman of the Company, presided.

The following is the Statement of the Chairman, which was circulated with the report and accounts for the year ended December 31, 1951:

It is with great pleasure that my co-Directors and I now present the Report and Accounts for 1950, the Company's Jubilee year.

The General Managers' Report attached gives the customary details of the work carried out during the year.

Ore production has improved to 402 tons in spite of the further drop in the grade of the ground worked to .75 lb. per cu. yd. This, however, was offset by a further decrease in working expenses to 9.82d. per cu. yd., resulting from the increased yardage treated.

Royalty charges absrobed £34,902, Profits Tax £34,800 and Income Tax £63,711. After writing off £6,203 from Property Account, the amount expended during the year, and £236 from Investment Account, we have been able to pay dividends amounting to 65 per cent, to place £20,000 from Profit and Loss Account and £10,000 from Taxation Reserve to the General Reserve, making this account £130,000, and to Carry Forward a sum of £11,893.

A sum of £2,000 has also been placed to Investment Reserve Account.

Property and Plant remain in the balance sheet at £100,000—likewise the Property Reserve amounting to £18,035, the book cost of 70,000 Tanjong Tin Dredging shares.

Gilt-edged investments stand at £46,316, Malayan Tin investments at £4,123, and the holding written down to a nominal figure of £1 in the Felspar Prospectors Ltd.

Cash balances amount to £152,820 and Tax Reserve Certificates to £35,075.

We have, as yet, no indication as to our claims for rehabilitation of the Mine and Estate, the expenditure on which to-day amounts to £54,896.

The security position still remains very unsatisfactory, but it is to be hoped that the re-settlement scheme now in operation, which, I may add is costing us a very considerable sum of money, may result in added confidence, leading, in turn, to increased information being available to the police.

BURDEN OF TAXATION

I give, as usual, the following figures showing the burden of taxation to-day:

Taxation:	Per Ton		Per Cent
Royalty Charges... ...	£86.82	=	17.08
Profits tax	86.57	=	17.03
Income tax	158.49	=	31.17
	331.88	=	65.28
Reserves, Writings off, etc.	70.74	=	13.91
Dividends	105.78	=	20.81
	£508.40	=	100.00

In view of the Company's completion of 50 years' work, it may be of interest to note that its original Prospectus was issued on May 31, 1900, when it was formed with a Capital of £60,000, of which 30,000 £1 shares were offered for subscription at par, the Vendors consideration being £30,000 in £1 shares, and £5,000 in Cash, leaving £25,000 available for Working Capital. The London price of tin was then £134 10s. per ton.

One pipe line, known as the Sinju Supply constituted the hydraulic installation, and in the year 1913 the Capital was increased to £120,000 to provide for the Kampar water service, which was constructed and owned jointly by this Company and Gopeng Consolidated Ltd.

The Company paid its first dividend—5 per cent—in 1902, when, incidentally, Income Tax was 1s. 3d. in the £, and with the exception of the restriction years 1931/32, and the Japanese occupation years of 1942/46, has been a constant dividend payer all along, the distribution to date on its issued Capital—representing an average rate of over 18½ per cent over the 50 years.

I think you will agree that this a is very successful and satisfactory record. At the same time, I would mention, as these figures may quite likely be used by our American friends, that the Capital required by us in our business to-day is very greatly in excess of our nominal capital of £120,000, and that the cost of bringing any tin property into production to-day is far in excess of what was possible 50 years ago and further, that Malayan and British Taxation absorb such a vast proportion of the gross proceeds as to render low grade properties totally uneconomical. Unless the price of tin is maintained at a reasonable figure, it is certain that very large areas of low grade tin bearing ground will never be worked at all, and it is in such low grade ground that the reserves of Malaya are now largely contained.

We owe a debt of gratitude to the Staff, both here and in the East for their loyal and constant service to the Company and especially to those in the East for their courage and fortitude in the face of threats and danger.

The results ofr the current year to date are satisfactory, the production for the first five months being 166.7 tons of tin ore. Two interim dividends of 15 per cent and 20 per cent respectively have been paid.

I would conclude by mentioning the successful development of Tanjong Tin Dredging Ltd., in which your Company owns a large interest, and I would invite shareholders of Kinta Tin Mines Ltd. to remain for the General Meeting of Tanjong Tin which follows immediately after this Meeting has been concluded.

CHAIRMAN'S ADDITIONAL REMARKS

The Chairman addressing the meeting said:

I desire to correct any wrong impression which may have arisen from the average earnings of the Company during its 50 years of existence. Although the average rate of distribution has been 18¼ per cent of our issued capital, yet the average rate on the capital employed in the business, including profits ploughed back, represents a rate of £8 12s. 9d. per cent only, and this is further subject to tax. Over the last 20 years, we have paid in Income Tax and Profits Tax a total sum of £272,506, and a further sum of £175,031 in Malayan Tin Royalties—a total of £447,557, which again represents an average rate of over 18¼ per cent on our issued capital.

Recently, you will have seen various statements made by the Economic Adviser to the Malayan Government concerning inflation. It is not only in Malaya, but also in this country, that the respective Governments indulge in inflationary practice and in neither centre is there any indication of a reaction towards economy nor to the setting aside of provision for the difficult years which lie ahead.

Prospecting for new tin bearing areas is, at present, at a standstill owing to the lack of available protection for the men engaged in such work. I fear, however, that this situation is temporarily hiding the fact that, owing to the high rates of Royalty and Taxation, together with to-day's cost of mining equipment, it is almost impossible to bring a low grade area into profitable production—with tin at its current figure.

The report and accounts were adopted.

TANJONG TIN DREDGING, LTD.

Mr. R. C. SAVORY'S STATEMENT

The Twenty-Fifth Annual General Meeting of Tanjong Tin Dredging Ltd. was held on July 25 at the Registered Offices, 65 London Wall, E.C.2.

Mr. R. C. Savory, Chairman of the Company, presided.

The following is the Statement of the Chairman which was circulated with the report and accounts for the year ended December 31, 1950:

The report and accounts now presented will, I am confident, be regarded as satisfactory.

The improvement which took place in the last months of the previous year has been fully maintained. The output of tine ore was 453 tons.

The recovery per cu. yd. was slightly higher at .57 lb. whilst working costs, consequent upon the greater yardage treated, decreased to 10.25d. per cu. yd. and the price received for tin ore was higher at £484 13s. 0d. per ton.

Our issued Capital remains at £185,834, and as a result of the year's working, we have been enabled to pay dividends of 25 per cent; to write our holding in Felspar Prospectors down to a nominal figure of £1; to write £407 off Motor Vehicles account; to place £1,000 to Investment Reserve and £45,000 to General Reserve, making the latter £75,000, and to increase the carry forward to £6,282.

The amount which we have received on Rehabilitation Loan account remains at £155,560, whilst to date we have expended on No. 1 Dredge and Building, etc., £82,512. Rehabilitation expenditure on the No. 2 Dredge is included in the total cost of that unit under Fixed Assets and will eventually be apportioned. As yet, we have received no notification of our award under rehabilitation, although certain companies have, we understand, received such notification, and we trust the matter will not be unduly delayed.

As regards No. 2 Dredge, the dates of completion forecast in my Statement for last year were approximately correct, and this unit commenced work at the end of November, 1950, since when, it has been running satisfactorily. You will, I feel sure, like to know that the efficiency of this unit has been remarkable, and reflects the greatest credit on all who were responsible for its removal and reconstruction.

The results for the current year are very satisfactory, the tota tonnage recovered for the first five months being 444 tons, and two Interim Dividends each of 25 per cent have been paid for the current year to date.

RISING COSTS

We must, however, be prepared for a considerable rise in costs both in the shape of working expenses and replacements, and I am of the opinion that the increased expenditure to be incurred under this head will not be full reflected in production costs until 1952.

The security position still leaves much to be desired, and we owe much to our General Managers and Staff on the Mine for their courage in carrying on under the very trying conditions in which they live to-day. It is to be hoped, however, that the resettlement programme now in progress will gradually have the effect of creating greater confidence amongst the Asian population and that this will result in a better flow of information regarding banditry to the authorities.

Your Board have under constant review the question of the economical exploitation of the Sungei Luas Area, but in view of the very high costs of equipment to-day and the penal taxation on profits of mining enterprises, it will probably be some considerable time before any decision can be come to. In the meantime, it has been decided to continue experiments as to the possibilities of Grab Dredging, and in conjunction with two other Groups, a new Grab unit has been ordered in order to complete the further trials necessary for this purpose.

If deliberate depression of the tin price is being made to influence any future Tin Conference and with the idea of forcing Malaya then to agree to unfair terms, and also to affect the completion of fresh contracts with Bolivia, I would remind those responsible that it has been written "In vain doth the Fowler spread his net within sight of the bird."

A low price level of tin must result in the higher cost producers —who are responsible for a significant proportion of the World supplies of tin—going out of production and further, will prevent ordered development of the lower grade areas, in which the future supplies of tin are largely contained.

The report and accounts were adopted.

BISICHI TIN (NIGERIA)

The Fortieth Annual General Meeting of Bisichi Tin Company (Nigeria) Ltd., was held on July 24, at Winchester House, London, E.C.

Mr. O. V. G. Hoare, chairman, presided.

The following is an extract from the statement of the Chairman which was circulated with the report and accounts:

Our production during the year was 450 tons of tin concentrates averaging approximately 74 per cent metal and 130 tons of columbite—73 per cent metal. This is an increase of 36 tons of tin and 51 tons of columbite compared with the previous year's figures. The mine costs per ton were approximately £313 for tin and £108 for columbite, giving a composite figure of £267 per ton. This is some £83 higher than the average figure for the previous year.

The revenue received for our output, £415,503, approximately doubled the previous year's revenue.

The net result to shareholders is that we distributed on September 1 last an interim dividend of 1¼d. per share and we now recommend the payment of a final dividend of 4¼d. per share, less income tax at 9s. 6d. in the £, leaving a credit balance to be carried forward on profit and loss account of £33,854.

We have given due consideration to the operations of the current financial year and have decided that the position to date warrants the immediate distribution of a dividend on account, and have accordingly declared an interim dividend of 3d. per share, less income tax, in respect of the year to December 31, 1951.

The manager's report, appended, briefly summarizes field operations.

A Lima excavator was purchased during the year and is now tin winning, after a short time on river diversion work. Another smaller shovel of 7/8 cu. yd. capacity is in course of transit to the mine.

Some 45,000 ft. of prospecting drilling was carried out during the year at a cost of a little over £3,000. As a result 411 tons of tin and 103 tons of columbite were added to the year-end reserves and, after taking into account the production previously referred to, the proved reserves at December 31, 1950, were 4,859 tons of tin, 840 tons of columbite.

With regard to the current year's operations the output for January to May was 298 tons of tin and 71 tons of columbite. This is an increase of 135 tons tin and 2 tons columbite compared with the corresponding period of last year.

The report and accounts were adopted.

WAIHI INVESTMENTS AND EXPLORATION

The Fifteenth Annual General Meeting of Waihi Investments & Exploration Ltd. was held at 48 Gresham Street, London, E.C2. on Tuesday last.

Mr. G. R. Mitchison, K.C., M.P. (Chairman) presided.

The following is an extract from the Chairman's statement which was circulated with the report and accounts:

This Company, besides its quoted investments shown in the Balance Sheet, has substantial interests in certain other Companies, to which I now refer.

We hold a controlling interest in Puket Tin Dredging Ltd. As I mentioned last year, there was some interruption of dredging, while the dredge was taken across a road in the early months of the year. Subject to that interruption, dredging continued during 1950 and is now proceeding successfully. During 1950 Puket declared a dividend of 5 per cent in respect of operations in 1949 and dividends amounting to 10 per cent in respect of operations in 1950. Those dividends increased this Company's "interest and dividends from investments," as shown in our Profit and Loss Account, and your Directors are able to recommend a dividend of 7½ per cent, while the amount carried forward is increased to a more suitable total of £4,437.

In March, 1951, Puket declared a further dividend of 5 per cent in respect of 1950, and it has recently declared an interim dividend of 10 per cent in respect of the current year. Recently, too, its claim to compensation for loss and damage suffered during the war was settled by a payment, which, including the advances already made towards cost of rehabilitation, amounted to £33,767.

In Harrietville (Tronoh) Ltd. we hold a minority interest. Our loan to Harrietville corresponds to similar loans made by three companies in the Tronoh group. The difficulties, which I mentioned last year, have continued and they have again been a source of constant attention and anxiety to the Directors in London and in Australia. The dredge is not yet clear of the old tailings and has been working at a loss. After full consideration and in agreement with the Australian Directors, two of whom have been welcome visitors to London this year, the lending companies, including ourselves, have each agreed to advance a further £10,000 to Harrietville, to enable the dredge to get on into virgin ground and try out the prospects there.

Fluorspar Ltd. has a mine and plant in County Durham. The mine has continued to yield fluorspar and lead. We continued to have trouble with the plant, particularly during the first half of 1950, but latterly there has been considerable improvement and, although our reorganization is not yet quite complete and some additional expenditure may be required, we are getting a better production of refined fluorspar, for which there is a good market.

We have also recently acquired mining rights in an area in Derbyshire, where lead and other minerals have been mined in the past. We are exploring the possibilities of development by modern methods and a small subsidiary company has been formed for the purpose, with a nominal capital.

The report and accounts were adopted.

Topical News in Brief

Miners' Welfare Scheme.—Representatives of the National Coal Board and of the National Union of Mineworkers signed in London this week an agreement for a miners' welfare scheme, which is to be submitted to the Minister of Fuel.

Chromite Discovered in Albania.—According to *Mineria y Metallurgia*, a Spanish publication, chromite deposits have been discovered near Lake Skodra in Albania. The deposits are estimated to contain 50,000 tonnes of chromite, enough for ten years' operation.

Development of Mineral Deposits in Kalat State, Pakistan.—The Kalat State Government is, according to a United Press of Pakistan report, considering a proposal for floating a semi State-owned corporation for exploiting the mineral resources of the State. The government is also reported to be considering to engage a German mining expert and geologist.

Coal From Lubimbi.—Lubimbi, the area where the new high grade coalfield was discovered, 150 miles north of Bulawayo, and on which proving operations were started a few months ago is already in actual use. Samples of the coal have been tested in a Bulawayo bakery and were found capable of great sustained heat and a quantity of 120 tons is to be treated by the Rhodesian railways.

The Lubimbi Coal Areas is controlled by the Anglo American Corporation of South Africa, who have an option on the field due to expire in eighteen months. But it is believed that if a decision to develop the field is made shortly, the pit can start production even before the option expires.

W. E. SINCLAIR, M.I.M.M.
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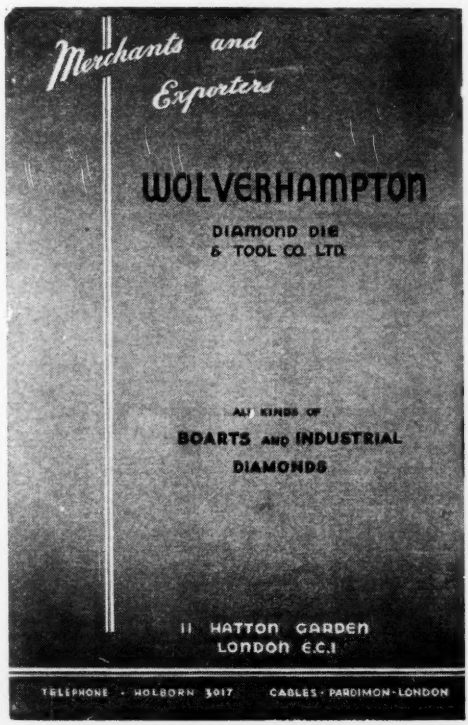
DIVIDENDS

British Tin Investment 9% *i* (Aug. 18)
Frickers Metal & Chemical 15% (Sept. 7)
George Cohen Sons & Co. 15%
Kent (F.M.S.) Tin 9d. *i* (Aug. 29)
Henderson's Transvaal Estates 15% (Aug. 14)
Murex 7½%
Nigerian Electricity Supply Corpn. 6% (Sept. 19)
Rambutan 5% *i* (Aug. 15)
South Bukeru Areas 9½%; 5½% *i* (Sept. 5)
Tekka 6d. *i* (Aug. 8)

i interim • Tax free



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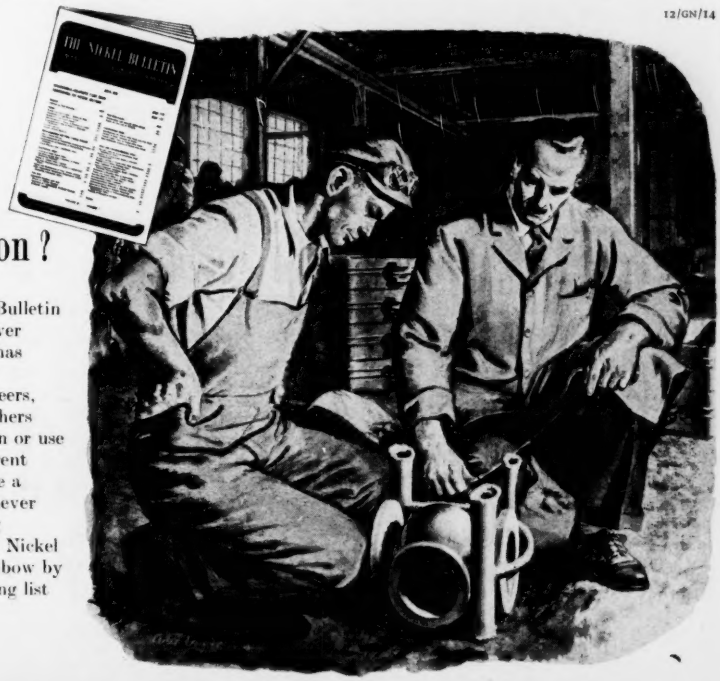

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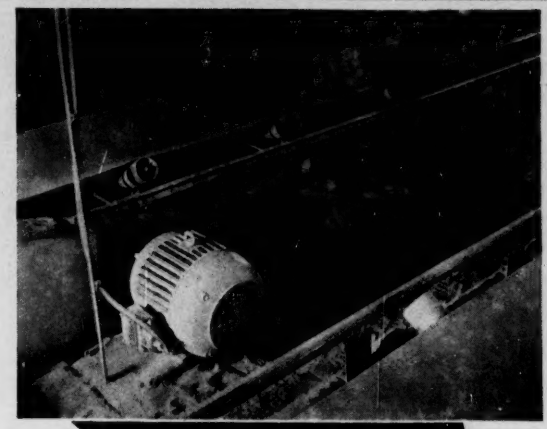

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